

IRC

International Water and
Sanitation Centre

WHO Collaborating Centre

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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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INTERNATIONAL WATER AND SANITATION CENTRE

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Foreword

Information as Resource

The years of the International Drinking Water Supply and Sanitation Decade (IDWSSD) are now behind us. During the IDWSSD, new technologies were exploited on a large scale. Rediscovered technologies were adapted and improved. Community participation matured into the community-based management concept. Thus for the first time, communities, and particularly women, were involved as partners in project design and implementation. Engineers, sociologists, and technicians were trained in new techniques, and an abundance of data and experiences on technologies, water resources management and project delivery mechanisms were gathered and evaluated.

These achievements, however, largely remain unheralded, and their results unshared and inaccessible, even within the originating country. It has become clear that many of these achievements only partially reach their full potential due to inadequacies in the management and application of information.

Indeed, the capacity to manage information is a fundamental pre-condition to sound planning and management of water supply and sanitation programmes and projects in developing countries. It lays the foundation for effective monitoring and evaluation, (applied) research, project management, human resources development, and training and education. Moreover the value of comprehensive strategies in information, education and communication is only just being recognized. For partners (both in and outside the sector) and users to better understand the importance and implications of water supply and sanitation, such strategies are unmissable.

Global Consultation

The Global Consultation on Safe Water and Sanitation for the 1990s held in New Delhi, India, from 10-14 September 1990 took stock of the achievements of the latter part of the International Water Supply and Sanitation Decade. It also laid the basis for collaboration between developing countries and external support agencies in the 1990s, with the aim of accelerating water supply and sanitation coverage. The New Delhi Statement contained the guiding principles for water supply and sanitation efforts for the

next decade. Underlying these principles were calls for "capacity building", for government to change its role "from that of provider to that of promoter and facilitator", for integration of "information, education and communications strategies" in human resources development, for empowerment of rural and urban poor in planning and resource mobilization, and for service agencies to be rendered capable of being "more cost-effective and responsive to consumer needs and demands". Common to each "condition for accelerated progress" is a quiet prerequisite: capacity building for the effective application of available information and knowledge.

In establishing the main lines of a global strategy for water supply and sanitation in the 1990s, the New Delhi Statement sends a potent message to each participant in the chain of water supply and sanitation delivery. More than ever, quality information will be needed by sector planners to promote and facilitate choice of appropriate project and programme approaches; by financial planners to optimize funding resources; by trainers to support institutional human resources development and community management; by communities to know how best to improve and expand services; and by technicians and project staff to track all the aspects of implementation from resources planning, groundwater surveys, new technologies and solutions, to progress monitoring and system utilization.

These are the issues which IRC will continue to address in the years to come.

J.M.G. van Damme
Director

1. Overview of Activities

In 1990 IRC concentrated its attention on two major areas of work: information management, including capacity building and the development of information tools, and knowledge enhancement on priority issues such as community management, the role of women, and water resources management. As a basis for this work the documentation unit's reference library was expanded considerably. Newsletters in English and French were the main products of the centre's global information generation and dissemination activities.

Information Management

Various international consultations last year emphasized the need for a comprehensive approach to information management in developing countries. Four key elements determine the effectiveness of information management: assessment of information needs and resources, product development, capacity building, and promotion. In Ethiopia, the Philippines, Tanzania and Uganda, information handling capacities were improved upon the countries' request, and assessment surveys were carried out. Top managers showed an encouraging interest in the need for information in the work of their institutions. It also became evident that awareness needed to be raised in the organizations about the nature, size and distribution of the potential user population the information systems and networks should aim to serve.

Alongside the Global Consultation a first meeting of an Informal Information Group, organized by IRC, committed itself to increased collaboration in the promotion, development and implementation of information activities, focusing in particular on capacity building at country level. Members of this group presently include amongst others sector support institutes such as the International Training Network for Low-Cost Water Supply and Sanitation Centres, specialized sections within the World Health Organization (WHO) and its regional offices, as well as information specialists from the Environmental Sanitation Information Centre at the Asian Institute of Technology (ENSIC/AIT), the Inter-African Committee for Water Resources (CIEH), the International Development Research Centre (IDRC), the Water and Sanitation for Health Project (WASH) and IRC.

Following the New Delhi meeting collaboration with the International Training Network for Low-Cost Water Supply and Sanitation of the UNDP/World Bank in various countries and at the global level intensified. Jointly with the UNDP/World Bank Water Supply and Sanitation Programme IRC produced two reference publications for wide dissemination and use in the sector. One is a basic list of 130 key publications, the other is an inventory of training materials for the sector in three languages.

*Knowledge
Enhancement*

Knowledge enhancement activities make information and experience available to decision makers, planners, engineers and project staff in developing countries in such a way that they are equipped to effectively apply this information. IRC contributes to this through collaboration in field and desk research, the shared development of publications, monitoring and evaluation, advisory services, development and demonstration projects, and training and briefing programmes. Much of the staff's input on knowledge enhancement was concentrated on community management, operation and maintenance, hygiene education and community-based financial management. With the same focus, desk research combined with field research was stepped up on the challenges facing the sector: environmental concerns and increasing urbanization problems. IRC's work on environmental problems concentrated on water-related issues. With financial support from the Netherlands Ministry of Housing, Physical Planning and Environment, a publication on water source protection was produced. IRC assisted organizations in India and Thailand with their low-income urban sanitation systems by helping them to review their experience with on-site and off-site systems.

One mechanism towards knowledge enhancement that IRC applies is that of development and demonstration. IRC continued support to two projects, one on piped supplies for small communities, and one on slow sand filtration combined with pre-treatment. In these long-term projects the countries involved experiment with methodologies, integrate services, develop local capacities and establish institutional facilities to solve pressing problems.

During 1990 an interesting spin-off occurred in Colombia: a new large-scale demonstration project started transferring the use of slow sand filtration systems to eight regions outside the Valle

region, where the project began. Collaboration intensified on various projects with the newly established Centro Inter-regional de Abastecimiento y Remoción, CINARA. Funded by a German contracting firm and Kreditanstalt für Wiederaufbau respectively, IRC assisted projects in Ghana and Burundi to improve functioning of slow sand filtration systems.

In the Piped Supplies for Small Communities (PSSC) project in Malawi and Zambia, the project teams, comprised of various ministries, undertook implementation work at the local demonstration sites. In Malawi, resident Monitoring Assistants started work at all eight project sites. The inter-ministry coordination team organized a training workshop with these field assistants from the Water Department. Together with the extension workers from the other two ministries concerned, guidelines were developed on how to work with the communities. The PSSC approach influenced the planning of a new Water Coordination Unit for the rural sector in Malawi. In Zambia a new project team involving various ministries did a lot of preparatory work at four sites. The Netherlands Directorate-General for International Cooperation DGIS agreed to extend the project in Malawi with 12 months and in Zambia with 18 months.

Other means used by IRC to enhance knowledge are advice, and monitoring and evaluation, often on request of third parties and in the form of field missions. In 1990, appraisal, formulation and monitoring and evaluation missions were carried out assisting various projects in Cambodia, Guatemala, Honduras, India, Kenya, Mali, Pakistan, Tanzania and Yemen Arab Republic. These mission involved advice on key issues such as community involvement in management and financing of water supply and sanitation programmes, integration with hygiene education, training needs in rural and low-income urban projects and programmes.

These advisory activities were funded by an increasing number of donors. They include DGIS from the Netherlands, the Danish DANIDA, FINNIDA from Finland, KfW from Germany, and UNICEF. Developing country nationals are increasingly participating in the evaluation missions in which IRC is involved.

Knowledge enhancement also includes the provision of services on request. Together with WHO, several workshops on community-based financial management were organized and a co-publication prepared, tested in the field and published. The German Agency for Technical Cooperation (GTZ) contracted IRC support to two workshops on operation and maintenance, one at IRC, and one at WHO. With the UNDP Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWESS) and funded by the Norwegian Agency for International development NORAD, the first annual abstract journal was prepared with current research on women, water and sanitation.

With the International Development Research Centre (IDRC) of Canada the state-of-the-art publication on key issues and considerations in handpump programmes was translated in French and disseminated. UNICEF requested a review of water harvesting experiences in five African countries. The field studies and desk research were combined into a joint publication in the IRC Occasional Paper Series. A study of the use of rainwater harvesting and run-off water supply as an improved or complementary source of water was commissioned by DANIDA. For GTZ a workshop was organized and a promotional brochure prepared for engineers on community participation and hygiene education.

IRC's training and briefing programmes, which combine programme inputs with the wealth of documentation support available at the centre, is another knowledge enhancement activity. In 1990, an increasing number of donor agencies funded participation of expatriates as well as developing country national staff. The general briefing programmes at IRC attracted 50 people preparing themselves better for their work in field projects. Three successful short training courses took place, two on the subject "Management for Sustainability in Water Supply and Sanitation Programmes in Rural and Peri-urban Areas" and one on "Community Water Supply and Environmental Management in Urban Low-income Areas". IRC conducts these short courses together with two renowned Dutch centres for international courses, the Management for Development Foundation and the Institute for Housing Studies respectively.

*General
Documentation
Support and
Information
Exchange*

Started in 1989 and reflecting increasing attention for environmental concerns within the sector, the environment-related holdings and activities increased substantially in 1990. The initiative to provide a current awareness bulletin with highlights from the periodicals received by IRC was positively received by sector specialists following a promotional mailing.

Aside from the earlier mentioned newsletters in English and French, IRC's general information exchange activities continued through the dissemination of 2700 publications in the various series (annex iv). Among the new publications in 1990 were the French translation of "Handpump issues and concepts in rural water supply programmes" (no. 25 in the Technical Paper Series), and one new title in the Occasional Paper Series, on water harvesting in five African countries.

*Public Information
and Promotion*

At the end of the year, WHO, UNICEF, and IRC initiated efforts to give the water supply and sanitation sector a higher profile both politically and financially. A meeting of international agencies in November in New York considered a Public Information and Promotion campaign necessary to mobilize policy makers and involve users in accelerated provision of water supply and sanitation resources, and their sustained and hygienic use. The sector will have to devote itself increasingly to communicating the economic, social and health benefits of water supply and sanitation to politicians as well as users.

Poster with messages about malaria used in Cambodia (Photo Roel Burgler)

2. Information Management

GLOBAL CONSULTATION

The New Delhi Global Consultation in September emphasized a number of important and innovative issues, several of which IRC is actively working on. The importance of management and exchange of information for the sector in the 1990s was one of these. This issue is at the heart of IRC's work. In New Delhi IRC organized an informal meeting between colleagues from AMREF, ENSIC, CEPIS, UNDP/World Bank Water and Sanitation Programme, RWSG/New Delhi, WASH, PEPAS, UNDP/Division of Information, WHO, and IT Publications/ Waterlines about collaboration on information development. Participants agreed to work together in promoting and implementing information activities with emphasis on capacity building at country level; and to draft a strategy paper for information management in the sector. The final paper will be used to promote a common approach to information development.

Various inputs were given to complementary demonstration sessions held around the New Delhi Consultation. IRC provided a resource person to all and a rapporteur to part of the 11 complementary sessions. The resource person also acted as liaison between a Radio Nederland World Service reporter and participants for interviews. Radio Nederland broadcasted 20 features and interviews in its various language programmes. In the press kit compiled by UNDP for the Consultation, the IRC article "Water from Rooftops and Tanks" featured among articles from UN agencies.

IRC, together with representatives from CEPIS/REPIDISCA and CD Resources Inc. presented a session on innovation in information exchange: the potential of Compact Disc - Read Only Memory. When linked to a personal computer CD-ROM provides extensive access and retrieval opportunities from bibliographic or full-text databases.

In the information/demonstration area at the New Delhi Consultation IRC organized hands-on demonstrations of the CD-ROM technology via two examples: the LILACS CD-ROM produced by PAHO, which contains databases from Latin America,

includes subjects such as sanitary engineering, environment and health, is provided in English, Spanish and Portuguese. The Pan American Health Organization produces this CD-ROM and provides updates to 150 users every three months. The other example shown was "Water, Women and Sanitation - Impact on Health, Agriculture and Environment". This CD-ROM features full text search and retrieval software suited for sophisticated access and manipulation of a full text database with material from PROWESS and INSTRAW.

*COMPREHENSIVE
APPROACH*

IRC's support activities on information for water supply and sanitation reflect the call for integration of the various aspects of information exchange. The existence of information does not necessarily ensure its use. Institutions and personnel working in the water and sanitation sector need to know where to locate information and have access to this resource. Two elements are essential in the process of information exchange:

- information should be available in an activated manner in documentation centres and libraries;
- extension services should exist to reach out and interact with users and widely promote the availability of information resources, and encourage exchange of information in its various formats.

Since its inception, IRC has been collecting and disseminating information on relevant issues in water supply and sanitation. It has initiated the preparation of a variety of information management tools and has explored creative ways of servicing external information needs utilizing its own documentation and information database. Over the years IRC has learned how very complex information exchange actually is. Its success is closely linked to issues of national and international collaboration, is dependent on currency exchange regulations and is hampered by prejudices with respect to the urgency and cost of information exchange.

End of Decade studies and consultations during 1990, particularly in the context of the Water Supply and Sanitation Collaborative Council and the New Delhi Consultation, have emphasized the need to approach information management at country level in a comprehensive manner. IRC advocates such an approach whenever

the opportunity arises and strives to undertake activities to that effect. In this process liaisons with partner organizations for the development of plans and programmes is essential.

In 1990 IRC concentrated on two areas: the INFO-IMPACT approach to build capacities in information and management in a few countries, and general information and documentation services.

INFO-IMPACT PROGRAMME

In response to earlier requests by the Steering Committee for Cooperative Action for the International Water Supply and Sanitation Decade, IRC initiated the INFO-IMPACT programme, during the course of which a *Framework for Technical Information Exchange* (TIE strategy) was developed in close consultation with representatives from developing countries and sector agencies. The framework is a consolidated approach to the implementation of information exchange activities in water supply and sanitation, bringing together four essential elements: assessment of needs and resources; product development; capacity building; and promotion.

These four elements reflect a general consensus that the constraints which face many developing countries can best be overcome by a phased approach. They also reflect a recognition that information exchange activities can only be sustained over the long term, if they meet the perceived needs of the beneficiaries and if the benefits achieved can be used to support the costs.

In 1990 the INFO-IMPACT programme focused on the establishment of information handling systems at various levels in the demonstration projects in Colombia, Malawi and Zambia (see next chapter). In these countries, IRC is combining information management activities with other IRC programme activities, so that these activities will mutually enhance each other.

During an eight-month assignment an IRC consultant undertook various assessment missions in Ethiopia, Uganda, Tanzania and the Philippines. In all four countries top managers showed an encouraging interest for the need for information in their institutions' activities.

The assessment missions revealed that in comparison with other sectors such as agriculture and health, the importance of developing information systems in the water sector seems to have been seriously neglected, both by national governments and by donor agencies. Five problem areas emerged which need to be addressed:

- 1) Lack of an appropriate structure.
- 2) Lack of a cadre of competent, highly-motivated and well-qualified personnel.
- 3) Insufficient consolidation, protection, and sharing of existing information.
- 4) Lack of adequate physical facilities.
- 5) Lack of adequate provision for both capital and recurrent expenditure.

Uganda

IRC assistance in Uganda concerned information management in the Water Development Department. The work dealt with the development of information management within the department through a phased programme, using the four major areas of information activities identified by the Collaborative Council: management information systems, technical information exchange, project and sector information, and public information and promotion. The department is responsible for rural water supply and sanitation throughout Uganda, collection and analysis of (geo) hydrological data on water resources, and approval of proposals for water supply and sanitation projects put forward by other organizations.

The Health Education Department in Uganda is expected to play an important role in motivating communities and promoting hygiene behaviour in the extensive water supply and sanitation rehabilitation and implementation programmes that the government of Uganda is planning to undertake in the next few years. At the request of HED, IRC prepared the terms of reference for a consultant to formulate a proposal for an effective information and documentation unit.

Ethiopia

As a contribution to the development of the water sector in Ethiopia, IRC proposed to establish an Ethiopian Water Information and Documentation Centre at the headquarters of the Water Resources Commission in Addis Ababa. At present the Water Technology Institute in Arba Minch is being set up with GTZ assistance to service the HRD needs of the sector in Ethiopia. Because Arba Minch is located in the deep south of the country, its role in servicing the information needs of the staff working in water supply and sanitation will be a local one. The general objective of the commission is to give central guidance in, and ensure the optimal utilization of the inland water resources of Ethiopia, discharging its responsibilities in collaboration with various other agencies. Although attention to all the areas identified by the Collaborative Council is recommended, the proposal prepared deals particularly with the establishment of an effective documentation centre as the first step in the creation of an information and documentation system designed to meet the technical information needs of the Water Resources Commission.

Tanzania

In Tanzania the work involved an assessment of phase 1 of the MAJIDOC project for the establishment and development of a national water and sanitation information network. MAJIDOC is a joint project of the Government of Tanzania and the International Development Research Centre (IDRC). The Rwegalulira Water Resources Institute in Dar es Salaam has embarked on the first phase of this project. IRC assessed this first phase, recommended improvements, and included some preliminary proposals for phase 2, for which MAJIDOC is approaching donors. IDRC funded phase 1, under which a documentation unit was constructed and equipped during 1990.

Plans for the second phase include reaching and servicing the information needs of all levels, from the national level to the community. One of the recommended activities was to carry out an assessment of the needs of the network's users. This may be combined with a survey of national sources of information supply. The needs of the user community at the academic Water Resources Institute and those of the users working in the Ministry and other public authorities in the sector are different, and will eventually require different information products.

Another essential task for MAJIDOC was the identification of the various sources of information which already exist in the country. In the final report submitted to WRI, IRC provided outlines for the various surveys and recommended action on the required organizational structure, legislation and regulations, manpower, collection of information materials, accommodation, furniture and equipment, and finance.

The Water Resources Institute further expressed great interest to get involved in the proposed project on Community Self-Improvements in Water Supply and Sanitation, which IRC is initiating in a few developing countries (see next chapter). Experiences in the COSI project could have a definite positive input for the information network in the country.

Interesting possibilities for information exchange also emerge from the outcome of the recently launched project Monitoring and Information Systems in the Morogoro/Shinyanga Rural Water and Sanitation Programme. More information on these two projects can be found in the following chapter.

Philippines

The assignment in the Philippines concerned the information and documentation activities of the International Training Network for Water and Waste Management (ITN) project - a project within the UNDP/World Bank Water and Sanitation Programme. The two partners in ITN Philippines, the Local Water Utilities Administration (LWUA) in Quezon City and the Institute of Hydraulic and Technical Engineering (IHE) in the Netherlands, requested IRC support to the review and formulation of the ITN-Philippines information and documentation activities for 1990-1994. A consultant for IRC reviewed the identified activities and recommended that:

- an essential task should be to identify the various sources of information on water supply and sanitation which already exist in the country;
- a national water and sanitation information network be established in which access to literature on health aspects would be provided through a link with an existing network, HERDIN, while the water information network would concentrate on technical, managerial and social aspects, especially of water resources and water supply.

Towards the end of the mission the consultant conducted a staff development workshop to relate his findings to the professional staff of the Training Network Centre. The implementation of the 32 recommendations in the report should begin as soon as possible during 1990-1991.

Tools

Bibliographic methods and tools for recording and retrieval of information are required to enable information centre staff as well as information extension workers to perform their functions efficiently and to service their customers in an orderly and effective way. Another important purpose of information manuals and guidelines is to advance the compatibility of systems and services at the country level, regionally and globally, thus enabling efficient cooperation among information centres and units at all levels.

Information tools prepared in the past include the Interwater Directory of Information and Documentation Sources on Water Supply and Sanitation and the multilingual Interwater Thesaurus. In 1990 a questionnaire was prepared to evaluate the need for further development and adaptation of the Thesaurus. The feedback from this questionnaire and the availability of funding will determine if a proposed standing committee on maintenance of the Thesaurus will be formed.

ITN

Following the Global Consultation in New Delhi, the ITN, the International Training Network of the UNDP/World Bank's Water and Sanitation Programme, organized a workshop in Calcutta for the directors of ITN centres. IRC was invited to contribute to these discussions to review the status of the centres and the future of the ITN programme. As a result of this meeting IRC intensified collaboration with country and regional ITN centres in support of their information activities as well as with the coordinating unit in Washington.

As in 1989, IRC shipped standard basic libraries to each of the Regional Water Supply and Sanitation Groups and ITN centres. Depending on their capacities ITN centres are implementing technical information exchange as part of, or in addition to their mandates regarding training and promotion in sustainable water and sanitation systems.

IRC is consulting with the ITN centres on options for collaboration and is exploring possibilities to offer its services to the development of information projects at the centres and their affiliates. Such services may include the training of documentation staff at the centres, the maintenance and expansion of the documentation holdings and the setting up of operational information exchange facilities.

The National Drinking Water Mission of the Government of India requested IRC inputs in the development of information activities for the India ITN programme.

WHO Regional Centres

IRC has been closely involved in the establishment of the information system CEHANET in Amman. CEHANET covers the Arabic-speaking nations in the Middle and Near East. Other WHO regional centres such as CEPIS for Latin America, CEHI for the Caribbean and PEPAS for the Western Pacific have been long-standing partners for IRC in promoting information issues in water supply and sanitation. CEPIS and PEPAS in particular contributed their views and experience to the consultation on collaboration in information development convened by IRC during the Global Consultation in New Delhi.

Other Partners

In the expected collaborative spirit of the next ten years and to enhance the efficient mobilization of scarce resources, IRC continued to seek further collaboration with many of its earlier allies for the realization of adequate technical information exchange.

In Asia, strong ties were kept with ENSIC/AIT in Bangkok. IRC is keenly following the further development of ENSICNET, an information network in development in six countries, recently funded by the Asian Development Bank.

AMREF for East Africa and CIEH and CREPA for French-speaking West Africa are collaborative institutes with which IRC intensified existing contacts.

CESI

Consultations continued around CESI-Profile, the method developed by WHO to collect, organize and manage sector and project information in developing countries. They have resulted in an understanding on the basis of which the CESI project and IRC plan to collaborate at the country level regarding the integration of

the CESI system and the Technical Information Exchange (TIE) strategy. It was agreed to begin in Africa in the context of country projects that can be undertaken depending on capacity and funding.

DOCUMENTATION SERVICES Another critical component of IRC's information management work includes the collection and dissemination, in various ways, of information on water supply and sanitation. The documentation unit has a central role in IRC's activities. The unit presently has holdings of about 8,500 publications (mainly "grey" literature). The subject coverage includes all aspects of water supply and sanitation in developing countries, in particular in rural areas. In 1990 acquisition of information resources on low-income urban areas and environmental aspects received extra attention.

IRCDOC Computerization of documentation holdings has facilitated quick access to literature and contributes to efficient and interactive literature searching and improved reference services. The entire IRC holding acquired since IRC's database was automated in 1984 is now available in IRCDOC in MINISIS.

IRC developed plans to make the IRC database available on floppy disk, or on Compact Disc-Read Only Memory (CD-ROM). Both methods provide the user with all the flexibility in searching an on-line database without having to pay telecommunications charges.

There are furthermore a rapidly increasing number of institutions in developing countries that already use the system, as well as several related databases in agriculture, rural development and health that are available on CD-ROM. This situation warrants a transfer and successful marketing of IRCDOC on CD-ROM. In 1990 IRC acquired CD-ROM facilities and three relevant databases.

Collaboration will be sought with other sector institutions to develop and produce a CD-ROM covering selected water supply and sanitation databases and full-copy versions of selected publications.

Another attractive and relatively economic option to provide full-text copies of selected water supply and sanitation documents to users in developing countries is the use of microfiche equipment. IRC already has a collection of 1,000 (mainly grey)

documents on microfiche. A microfiche library of unpublished documents (training materials and case studies from the field) will allow and encourage easy and direct transfer of technical information to the national, intermediate and local level. IRC started to investigate the feasibility of introducing a package consisting of a basic library with some 1500 microfiches and a portable microfiche reader.

Highlights

IRC produces a current awareness bulletin, "Highlights", which in addition to current contents from over 240 journals and newsletters, contains the latest information on research, new projects and other developments. "Highlights" is distributed externally on a subscription basis. To enhance its value and use IRC has streamlined the presentation of this current awareness service. This includes partially edited items with a sharper focus on the sector. The publication of a more attractive and more defined product should make the information more suitable for the target group: users at ESAs, developing country institutes and water and sanitation programmes, who received a promotional mailing of the first issue.

Outsiders can also subscribe to a Selective Dissemination of Information (SDI) service. Based on individual interest profiles, IRC prepares regular printouts from the new acquisitions listing relevant documents. This service is offered linked to a subscription to "Highlights", or as a separate product.

Visitors and Requests

In 1990, 125 individual visitors and 4 groups of students from the various international courses which take place in the Netherlands made use of the documentation unit and database to search on a wide range of subjects. In addition the documentation unit answered 100 external requests, requiring substantial technical and information retrieval support. Out of those, 20% required extensive searches in IRCDOC and external databases. IRC staff answered approximately 400 additional requests for general information.

Services

A tri-lingual "Inventory of Selected Training Materials" was prepared on behalf of the UNDP/World Bank Water and Sanitation Programme, for publication in 1991. The inventoried training materials contained content and methodology on training in English, French and Spanish. Preliminary findings indicate that: there is not much material available that is suitable for formal or

structured training, and job-oriented or performance-oriented training activities are scarce in Latin America; there are many activities oriented towards dissemination of ideas (seminars, lectures, workshops, etc.), for which a large amount of material is available; there are several agencies qualified to produce good training material; and searching in libraries and documentation centres is difficult because of lack of a common descriptor for training materials.

In 1990, IRC revised the 1987 "List of Basic Publications on Community Water Supply and Sanitation". Developments in the sector in the last few years necessitated a review of this list with the aim of weeding out titles that have gradually become obsolete and introducing new ones reflecting experiences of the last few years. Information and documentation centres in developing countries and project as well as field staff engaged in water and sanitation activities will benefit from the guidance and reference support provided through this selection of essential publications.

Literature Reviews Documentation unit staff began compiling general literature reviews on basic sector issues, training materials on specific subjects, and information on current research and training programmes. A first review considered groundwater pollution by on-site sanitation.

Poster illustrating the partnership approach as applied in the Piped Supplies for Small Communities project in Malawi and Zambia.

3. Knowledge Enhancement

In order to effectively attack the sector problems in the 1990s, it is essential that the governments in developing countries and the External Support Agencies (ESAs) adjust and implement the approaches developed during the Water and Sanitation Decade. In various international meetings community management has been recognized to be one of the most challenging needs; without it sustainable water and sanitation facilities are impossible. Another pressing need is the intensification of measures to protect the environment. IRC's intensive involvement in and contribution to these issues is evident in its various information- and communication-oriented programme activities.

In 1990 IRC programme work concentrated on community-based approaches integrating socio-economic and technical aspects in water supply, sanitation and hygiene education. IRC's work in the selected areas of focus is described in more detail in the following paragraphs.

SLOW SAND FILTRATION

The experience and related information on slow sand filtration (SSF) that has been accumulated over the years is increasingly in demand by other organizations. Requests for support have been received from several countries including Colombia, Egypt, Haiti, Mozambique and Zambia. Together with its partners in Colombia and India, IRC offers several services including information support; advice on SSF design; establishment of demonstration projects; advice on monitoring, evaluation and problem solving of SSF pilot/demonstration plants; and training and briefing on SSF at IRC.

Colombia

CINARA (Centro Inter-regional de Abastecimiento y Remoción de Agua) is the foundation which carries out the activities on slow sand filtration in Colombia. It was founded in 1989 on the initiative of the University of Valle (UNIVALLE) and with support from several Netherlands-supported projects. In 1990 it was expanding its capacities to take up more information-related activities in the future. The first governing board meeting of CINARA took place in November. The board (in which IRC is represented) reviewed objectives, work programme, staffing,

finance and the future programme. CINARA has an enthusiastic staff of 63, of which 32 are professionals. One of the proposed activities is the setting up of an information and documentation unit, for which IRC collaboration will be explored.

Over the last five years low cost drinking water treatment by slow sand filtration has been introduced in Valle and Cauca regions in Colombia. This was carried out by CINARA with advice from IRC and financial support from the Department of Research and Technology of the Netherlands Ministry of Foreign Affairs. As a result of the project SSF treatment has been adapted to suit the local conditions and is now fully accepted. Over 16 systems are operational or under construction and another 15 are being planned. The working group now acts in an advisory capacity in the region, with occasional support from IRC. To foster a similar development in other regions the working group, together with IRC, has developed a plan for guided dissemination of the experiences and the establishment of similar working groups in other regions in Colombia.

The "Transfer of Slow Sand Filtration in Colombia" (TRANSCOL) project, which aims to establish demonstration plants in eight regions, is supported by the Netherlands and Colombian Governments. As part of his training for the TRANSCOL project, one of the staff members from CINARA spent six weeks at IRC. In a briefing programme tailor-made to his needs, he developed an information base and defined objectives and the workplan for a water surveillance and control component for the introductory workshops. He also participated in the Participatory Training Workshop organized by UNDP/PROWWESS. Introductory workshops have been held and communities have been pre-selected in four of the eight chosen regions.

In November the first training workshop took place in Cali with 12 participants from the 4 regions in preparation for the participatory diagnosis at the demonstration sites. In this workshop an integration game developed by PROWWESS was tried out, which generated interesting discussions on community participation.

The new Minister of Health has in principle agreed to support the project and assist in the financing of 20 slow sand filtration schemes. It has become very clear to all involved in the project

that a change in attitude towards a more service-oriented approach is crucial for success.

Advice activities were also carried out in Colombia. IRC staff reviewed IDRC-supported community water treatment systems, focusing on the community management of water supply systems using slow sand filtration technology in four communities in the Cauca Valley. The review contributed to a community-based monitoring system of slow sand filtration plants. Visits to local plants and discussions with the social team from CINARA resulted in a paper dealing with the role of social scientists in water projects, the methodological aspects of evaluation work, juntas administradoras, and the monitoring process of water supply systems.

Ghana

The Volta Lake Transport Company in Ghana is constructing slow sand filters in its sector Termini. As a result of a tailor-made briefing programme at IRC, the project's civil superintendent developed practical operation and maintenance guidelines for slow sand filters in his project; a water quality and performance monitoring programme; a training programme for caretakers; and an information package on SSF technology and training.

Burundi

Contracted by the German Kreditanstalt für Wiederaufbau (KfW) IRC provided advice to REGIDESO, the Water Supply Corporation of Bujumbura, Burundi on slow sand filtration. The corporation faced serious performance and operations problems with their slow sand filters due to the high pH (acidic or alkaline content) and hardness of the raw water. To help solve these problems IRC organized an expert meeting in The Hague in July, which included project staff from Burundi. The unstable raw water conditions cause precipitation of calcium compounds on the upper filter sand, resulting in poor filter performance. Reviewing the options for solving this problem the group recommended to carry out pilot studies with limestone and sand/gravel (up-flow) filters. An field mission by an expert to the water treatment plant in Bujumbura was also part of the activity.

PRE-TREATMENT As follow-up to the spreading of the slow sand filtration technology the University of Valle started a research programme in which five pre-treatment methods are being tested to find which is most effective for high turbidity surface water. IRC carried out a

two-week support mission to Cali in February, during which assistance was given in the start-up of a programme for the testing. Management of the research project was discussed, including laboratory procedures, data management and progress reporting.

Other activities included the review of the design and operation and maintenance problems in pre-treatment plants at the test site and in the field. The project also contributed to a planned IRC Technical Paper on pre-treatment methods.

First testing results of up-flow-, horizontal roughing- and river-bed filtration were very good. At the beginning of December the research plant was put in operation for additional testing with lower velocity rates until April 1991.

PIPED SUPPLIES Piped water supplies (public taps, neighbourhood taps, yard and house connections), occupy an important place in the overall coverage of rural and urban fringe communities in developing countries. However, although they bring additional benefits, piped supplies are also more costly to install and maintain than other levels of service. Improved approaches to piped supplies can therefore yield proportionally larger savings which can then be re-invested. This will ultimately mean more people having access to higher levels of service.

In the past IRC has supported development and demonstration projects in both Malawi and Zambia to develop integrated approaches in piped supplies programmes. With support from the Dutch Government the Piped Supplies for Small Communities (PSSC) project is now in its second phase, which includes sharing of knowledge and promotion of wider application of this approach.

In Malawi, where local demonstration sites continue to be constructed, field assistants from the Water Department (called Monitoring Assistants) now reside in each scheme location. The inter-ministry coordination team organized a training workshop with all the extension workers in the project. The workshop highlighted the PSSC partnership approach. With outside assistance the extension workers developed guidelines on how to work with the communities at the eight project sites.

In Zambia, a new and enthusiastic project team involving various ministries was established. A lot of preparatory work was done

prior to field implementation at four sites. Both countries have requested project extension and budget redistribution. The Dutch Directorate-General for International Cooperation agreed to extend the project in Malawi for 12 months, and in Zambia for 18 months.

Malawi/Zambia

The approach used in the piped supplies project seems to be catching on in Malawi and Zambia. In the first half of the year the Malawi Water Department decided to apply the approach to several new schemes funded by the United Nations Capital Development Fund. The PSSC project approach will also be used in the new UNDP-funded Water Coordination Unit for the rural water sector in Malawi. A large number of ESA representatives requested information about the PSSC approach for possible application in their projects.

In both countries IRC assisted in holding the second part of a course on local preparation and production of manuals for use in the project. In Zambia three manuals written for extension workers were field-tested within the framework of the course:

- Why a pit latrine?
- A teaching manual on community participation
- Operation and maintenance guidelines for a communal standpost.

In Malawi drafts for two manuals, one on hygiene education and one on operation and maintenance, had been prepared for field testing during the course. All these manuals will be edited to include the findings of the field tests. They will then be reviewed by specialists, and printed and distributed locally.

In November work plans for 1991 were discussed with the project teams in both Malawi and Zambia. Plans included preparation of participatory training courses in the projects and project self-evaluation.

Publications

Substantial work was put into finalizing the draft IRC Technical Paper on the partnership approach to piped supplies. This publication combines experiences in the integrated development and demonstration schemes with other field studies and desk research. As such it will have relevance for all those who are involved in community-managed systems. The book was nearing completion at the end of the year.

Also as support to the piped supplies project, considerable work has gone into the preparation of a paper on an action-learning approach for village water committees. Following internal review a second version was being prepared at the end of the year.

*COMMUNITY
SELF-
IMPROVEMENTS*

Integration of sanitation and hygiene education in water projects is of great importance to avoid negative developments, including drainage. Sanitation to date lags behind water supply development because it is a less felt need. However, since only combined improvements in water supply and sanitation can reduce the health risk, greater efforts in sanitation development are needed.

IRC continued its support to the development of proposals to test a 'demand-driven' approach towards water supply and sanitation. In this approach communities are encouraged and guided by community-based workers to improve their own water supply and sanitation facilities. Various countries have expressed interest in testing of this approach towards community self-improvements, for which IRC prepared the training manual "Community Self-Improvement in Water Supply and Sanitation" in 1989. Local organizations in Colombia, Peru, Tanzania, Malawi and Zambia were drafting proposals at the end of the year for submission to potential funders.

The possibilities of starting a project aimed at promotion of and support to community self-improvements in water supply, sanitation and environmental protection (COSI) were discussed with CINARA.

The foundation made a draft translation in Spanish of the training manual "Community Options for Self-Improvements", and expressed interest in assisting in further development, testing and demonstration of the community self-help approach in the field.

Two other organizations in Colombia also showed interest in the COSI-project: Comité de Cafeteiros, a coffee farmers' co-operative which is also involved in social infrastructure development, and PLADEICOP, the development agency for the Pacific Coast region.

*MONITORING
AND
EVALUATION*

Special emphasis was placed on the development adequate monitoring and evaluation techniques to ensure efficient use of project resources. Over the years a range of activities have contributed to increased knowledge generation and transfer about this important subject. They include the earlier course modules for evaluation developed together with UNICEF, based on the Minimum Evaluation Procedures of WHO. In 1990 IRC advice was requested for KfW-supported projects in Honduras and Guatemala, and for the UNICEF-supported rural water supply and sanitation programme in Mali. Advisory support continued to a DANIDA/UNICEF-assisted project in Bangladesh, and the Netherlands assisted projects in India and Tanzania. In all of these projects monitoring systems were developed with the focus on community-level monitoring.

Tanzania

The DGIS-funded Morogoro/Shinyanga Rural Water and Sanitation Programme in Tanzania introduced a monitoring and reporting system in all the project villages in August. This community monitoring system was developed with IRC assistance, and introduced after field testing. The system monitors village management and maintenance of piped systems and handpumps. It also gives insights into sanitation and hygiene improvements. The first results were reported to be promising.

India

IRC continues to support the joint Indian/ Netherlands water and sanitation programmes. In Uttar Pradesh, Andhra Pradesh, Gujarat and Kerala the Netherlands Government assists long-term projects involving various Dutch consultants. In 1990 IRC provided advice and support in various ways:

- preparation of a draft framework for Indian/Netherlands collaboration in Gujarat and Andhra Pradesh 1991 - 1995;
- advice to the relevant department at the Netherlands Ministry of Foreign Affairs on various projects;
- preparation of a discussion paper on institutional development;
- organization of the sixth joint meeting of the review and support missions, with emphasis on sanitation and involvement of non-governmental organizations.

*Honduras/
Guatemala*

Contracted by the German bank Kreditanstalt für Wiederaufbau (KfW), IRC staff carried out two support missions in 1990 to KfW-supported projects in Honduras and Guatemala. Assistance was given in both countries in evaluating their hygiene education programme, and in initiating an impact evaluation.

In Guatemala IRC assisted in training promoters in participatory techniques and in helping to prepare a programme outline for building up management capabilities of village water committees in the KfW project.

Cambodia

Since 1988 IRC has been providing advisory and backstopping services to the NOVIB-supported Integrated Infrastructure Upgrading Project in Phnom Penh, Cambodia. Under the existing contract staff members went on various support missions during the year. Together with the NOVIB project officer, IRC assisted the project in specifying its approach.

In follow-up, IRC staff facilitated a five-day workshop on community participation and hygiene education in the project. Members of the implementation team were also assisted with the formulation of a workplan to achieve maximum input from the community.

During another mission the project was guided in the further development of a community-based operation and maintenance system for improved facilities, which included a cost-recovery component with community organization. Training needs of project staff and other groups involved in the project, such as caretakers and community workers were assessed.

Mali

UNICEF Mali requested IRC assistance to coordinate the mid-term evaluation of their water supply and sanitation programme in the rural areas. With a local consultant a pre-evaluation study was prepared and carried out in 50 villages to determine the impact in terms of coverage, functioning of systems, utilization of handpumps and other water sources for different use, village-level organization and improved hygiene. A team composed of representatives of the Ministries of Water and Health carried out the actual evaluation, with full participation of the project manager and UNICEF project staff.

Major findings included:

- the India-Mali handpump was accepted in many villages despite corrosion problems;
- in some villages people were also investing in improvement of traditional wells;
- the repair system based on a network of area mechanics was effective in areas with rather dense population and sufficient numbers of pumps.

These findings were discussed at a workshop which combined groups of project staff and representatives from ministries. Participants in an Objective Oriented Project Planning exercise developed a set of strategic objectives based on strengths and weaknesses analysis, and identified operational plans and priorities for the next two years. UNICEF staff expressed great interest in this evaluation and planning approach. Follow-up advice was requested on implementation of participatory approaches and the development of appropriate messages for sanitation and hygiene improvement.

Kenya

FINNIDA requested IRC to organize and execute the mid-term review for its rural water supply project in western Kenya. The joint Kenya-Finland Water Project has been running for nearly 10 years, and partially covers four districts with a population of 1.7 million. The project aims to increase coverage by 400,000 in the present four-year project period. The terms of reference for the review mission emphasized cost recovery, training and manpower development, and institution building.

In response to solicitation of interested parties by IRC, the African Medical Relief Fund (AMREF) was selected to act as local consultant for the review. AMREF provided a technically- and a socially- oriented consultant to carry out field work. Both consultants were briefed at IRC in early December to prepare for the review. Apart from generating an evaluation report, the review also set out to achieve a large measure of local capacity building in evaluation through the consultants. The results of the review and possible follow-up were to be discussed in a development workshop for project staff.

Pakistan

IRC carried out two formulation missions to Pakistan for projects earmarked for support from the Netherlands Directorate-General for International Co-operation (DGIS). In Baluchistan and North West Frontier Province (NWFP) projects are being planned as part of a strategic investment planning process led by the World Bank for each province in Pakistan. In both provinces local consultants were involved in the project preparation teams. In Baluchistan Zhob, Qlla Saifullah and Quetta have been selected for Dutch support. The project plans, which involve a new community-based methodology, were formulated with the full participation of the Local Government and Rural Development Department. At the end of the year, the project planned for Baluchistan was in the final stage of approval. It was agreed that the initial six months will be planned in detail in co-operation with UNICEF.

The Dutch-supported project in North Western Province is to be concentrated in two districts of Swat. The Netherlands' support would be complementary to the German support to the Department of Public Health Engineering in this district.

Various local consultants in Pakistan have expressed a need to establish a resource centre for the water and sanitation sector. IRC has taken this up with the World Bank Rural Water Supply and Sanitation Group in Pakistan. The Bank is looking at the need for developing a support capacity at the national level. At the end of the year the option of establishment of an ITN Centre in Pakistan and IRC's support to this were being discussed.

Yemen Republic

Advisory services to a number of water-related projects in the Yemen Republic continued, be it at a lower scale than in 1989. These Netherlands-supported projects include water resources studies and water supply and sanitation projects. IRC participates in the "advisory group land and water" which comprises various disciplines in the Netherlands. This group provides advisory services to both the DGIS Yemen desk and the projects.

In the first half of 1990 IRC participated in an evaluation mission with a Dutch and a local consultant to a rural water supply project. The evaluation showed an encouraging increase in community participation, women involvement and hygiene education, resulting in increased satisfaction among users of the improved piped water and sanitary facilities around Dhamar and Rada.

International workshop Together with five UN organizations, six bilateral donors and six other NGOs, IRC participated in a PROWWESS/UNDP and IDRC-sponsored international workshop on community monitoring and evaluation at WHO in Geneva. Workshop discussions were based on the draft publication "Participatory Evaluation: Tools for Managing Change in Water and Sanitation" by D. Narayan-Parker. In this meeting IRC addressed questions on what methods and capacities communities need for assessing their progress in improving local water supply and sanitation. The group also discussed what measures would lay a sound basis for such evaluation, so that people would be enabled to better manage project operations for improved results. The workshop identified three goals for the sector strategies: sustainability, effective use and replicability. Capacity-building within the community is the main requirement for progress towards all three goals.

The workshop concluded that monitoring and evaluation procedures in support of capacity-building of individuals and institutions need rethinking. A basic core of indicators was recommended for universal application at community, national and global levels. Results from the workshop and the interim report in the form of a brochure was presented by PROWWESS in a complementary session at the New Delhi Global Consultation.

*LOW INCOME
URBAN AREAS*

Sustainable, community-based, low-income urban water supply and sanitation systems form an essential focus for future years. Rapid urbanization of developing countries requires new approaches, in particular in serving poorer sections of the population with adequate water supply and sanitation facilities. In the low-income urban areas water supply and sanitation are in most cases better integrated than in rural areas. In the latter water supply systems are often established without due attention to sanitation facilities; this often leads to unhealthy situations. Much information has already been generated by different organizations including UNDP and the World Bank. IRC has started compiling this information, with emphasis on the analysis of analyzing community-based approaches.

India/Thailand

National agencies in India and Thailand are carrying out a two-year project to review operation and maintenance aspects of urban sanitation systems in low-income shelter areas, with

assistance from the Institute for Housing Studies in Rotterdam and IRC. The Dutch Directorate General for International Co-operation has committed dfl 642,000 to this project which officially began in October 1989.

The project aims to contribute to improvement of low-cost sanitation programmes through various means including:

- review of operation and maintenance aspects of on- and off-site sanitation systems, including use and performance, user attitudes and practices, and the role of the agencies in these aspects;
- establishment of long-term institutional and investment requirements for the operation and maintenance of sanitation systems;
- formulation of operational recommendations and guidelines for planning, design and implementation of future low-cost systems.

Planning workshops, training of surveyors, review seminars and establishment of large-scale surveys form an important part of the first year's work.

In India the executing agency is the Human Settlements Management Institute (HSMI) under the Housing and Urban Development Corporation (HUDCO). In Thailand, the National Housing Authority (NHA) and Chiang Mai University work together on the research. Workshops were held in both countries to get the project under way.

Pakistan

From 1979 to 1986 UNICEF and the Dutch Government supported the Baldia Soakpit Project, which was carried out in Karachi. UNICEF and the Dutch Embassy in Pakistan requested IRC to help make the interesting experiences and follow-up of this project accessible to a wider audience; DGIS agreed to fund the project. At the end of the year IRC and a local consultant who had been active in the project carried out a study in Baldia to review the impact of the project four years after its completion.

One of the initial conclusions was that the documentation of the project is rather poor. Field records, records from UNICEF and the 1988 evaluation report for instance, showed different numbers of soakpits. A financial breakdown is also difficult to obtain. Because of the time lapse people do not remember clearly what has

happened years ago. This makes an analysis of the actual steps taken a difficult but challenging task.

Because of the project, people have become much more conscious of the need for environmental sanitation, and are now motivated to improve the environment even more. The construction of soak pits and the participation of the community, especially the women, led to the start of an education programme and primary health care services. These achievements are being further developed, although it has become clear that the process of institution building has not received enough attention during and after the project. The case study, which is due at the end of 1991, will concentrate on an analysis of the community-based approach and the technical and social achievements in Baldia, in order to enhance replication elsewhere.

*COMMUNITY
PARTICIPATION
AND HYGIENE
EDUCATION*

Community Participation and Hygiene Education (CPHE) is an area in which IRC has been involved for some time, as is reflected by several of its publications. The efforts of the informal working group on CPHE, established in 1989 by the German Agency for Technical Co-operation (GTZ), have contributed to continued development of this area. Together with the German-based Institute for Medical Cooperation IMC, IRC assisted GTZ in the preparation of five manuals on CPHE in English, French and Spanish. Each document deals with a different aspect of CPHE: sustainability and effective use, which summarizes important reasons for CPHE for policy makers; practical guidelines, which address key components for CPHE; tools for integration of CPHE into water and sanitation projects; indicators for success, which highlights CPHE indicators and addresses the establishment of a monitoring system; and strategy development, which reflects a strategy framework for CPHE promotion internationally as well as nationally.

One thousand copies of each document have been printed for field testing by different water supply and sanitation programmes in developing countries.

It is expected that the manuals will be revised in about 18 months, based on results of the field testing. Other follow-up activities were likely to include country-level seminars to analyze CPHE experiences, training of staff in Europe and the field, development and testing of indicators, and collection of positive CPHE experiences including those establishing evidence of sustainability.

*RESOURCES
COVERAGE*

Community-based systems have great potential and are urgently needed, as is becoming apparent from the recent international work led by the World Health Organization on resources coverage, community-based financial management, and legal aspects. IRC contributed to the international working groups on these subjects.

There is a growing demand for better and more extensive information on financial management of water supply and sanitation programmes, particularly about methods of revenue generation at the local level. At the same time cash raising and cost recovery need to be placed in a broader framework of resource coverage in the context of sustainability of water supply and sanitation systems.

WHO's Community Water Supply and Sanitation Unit contracted IRC for major inputs to the preparation, review and publication of a cost recovery manual which was developed in the course of several meetings in the past. WHO set up a team of six persons representing WHO, IRC, and consultants from Zambia, Norway, UK and Switzerland. A planning meeting for the development of the manual was held early in the year, and a meeting for external review of the final draft was held in May at IRC. The manual, in the form of combined guidelines for largely agency- and largely community-managed systems, was completed shortly after the May meeting. The preliminary WHO document with due acknowledgement of all the other agencies involved was published and presented at the New Delhi Global Consultation in September.

WHO incorporated reactions to the guidelines, and at the end of the year they were translating the manual into French. Both the English and French versions will be printed by IRC. Proposals for further workshops to test the framework developed by the working group were being discussed with a few countries in Africa.

As of mid-July a geo-hydrologist with field experience in Guinea Bissau and Mozambique spent nearly three months at IRC working on resources coverage with special emphasis on handpumps. The consultant, who was on DGIS-supported study leave, also prepared a framework and outline for guidelines on practical project management.

Training water committees in management and cost recovery is an important component of sustainable water supply and sanitation systems. Preliminary work in this area, which may lead to the development of training modules later, was started at IRC.

ROLE OF WOMEN

Current and potential roles of women in the development of sustainable water supply and sanitation facilities is an area in which IRC has a long-standing record. With several earlier publications on the subject and advisory support to field projects, IRC has established a solid information base for support programmes.

Two major activities were carried out in 1990. The training modules on women, water and sanitation published by the Institute for Training and Advancement of Women (INSTRAW) were revised, co-funded by the United Nations Natural Resources and Energy Division. The four draft modules were submitted at the end of the year.

With UNDP's Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWWESS) a contract was signed in 1990 to produce an annual abstract journal in each of the next three years, containing new information on the roles of women in water and sanitation. This work aims to assure that a wide audience has access to the studies on functions and effects of women's involvement in water supply and sanitation. The Norwegian Agency for International Development (NORAD) funds this activity. The literature for the first issue was reviewed and selected, and final printing and distribution of a promotional flyer were planned for the first quarter of 1991.

HYGIENE EDUCATION

Hygiene education continues to be an important area of activity for IRC. This year the focus was on the development of practical tools for hygiene educators and project managers to better integrate this essential component in their programmes. A draft publication on key issues in hygiene education planning and management has been completed. Following favourable reactions from external reviewers the manuscript was being finalized for printing in early 1991.

Following the 1988 publication "Water supply and sanitation in primary school education in developing countries, a preliminary study", IRC developed a proposal for further activities in this area, including a review of school sanitation facilities and programmes in selected countries. Early in the year a checklist for this review was tested on small scale in Cambodia. At the end of the year IRC contracted CINARA to do a similar review in 20 schools in Colombia. Results of this review will be used in an IRC publication on planning, construction, use and maintenance of sanitary facilities for schools, and for further development of proposals for country work.

Particular attention is needed for practical planning of integrated projects and the establishment and testing of suitable indicators which adequately address community participation, community management and hygiene behaviour. IRC collaborated with PROWESS and other agencies in the development of such activities.

MAINTENANCE

Community-based improvement of existing water supply and sanitation systems requires urgent attention, as operational problems are reported from almost all projects in the developing world. Very likely these problems will increase as more systems age. From the wealth of literature on these subjects and the experience from many projects, it is becoming clear that an enormous loss of investment will occur unless considerable efforts are made. Problems which need to be tackled include inefficient management of maintenance, insufficient training, inadequate revenues and high incidence of leakage. Community-based approaches again seem a powerful and realistic answer for many countries, particularly for the systems in rural and peri-urban areas. These communities, however, may already be de-motivated by systems that are not working properly, so new approaches and initiatives will have to be tried out.

The most suitable starting point for improvement is joint evaluation of the system and joint problem identification. This has already been tried to some extent in both the PSSC and the SSF projects, but further refinement of the methodology is required.

In 1990 collaboration with WHO and GTZ on operation and maintenance intensified. Following up the meeting in 1988 on this

subject GTZ contracted IRC support for two meetings during the first half of the year. From 20-23 February an informal meeting was held at IRC, with representatives from WASH, GTZ, the World Bank, and WHO. The group reviewed operations and maintenance problems, among which were insufficient funds, inappropriate technologies and poor sector performance. Strategies for lasting solutions were formulated, which include promotion of O&M by external support agencies, improved water supply and sanitation systems, and improved user roles.

A background document prepared by members of the Operations and Maintenance Working Group was reviewed in a meeting in Geneva at WHO from 19-22 June. IRC arranged for the input of a senior sector specialist, a chairman, rapporteur and resource person for this meeting, and contributed to the processing and publishing of the workshop report. A summary paper was prepared and distributed at the New Delhi Global Consultation. The work from the group was also the subject of one of the complementary sessions in New Delhi.

*WATER SOURCE
PROTECTION*

Water source protection is an important component of water resources management, which in turn is an important element of environmental management. Inadequate water source protection endangers investments in the water sector in developing countries. With financial support from the Drinking Water Department of the Netherlands Ministry of Housing, Physical Planning and Environment, the literature collection and review activities on water source protection were expanded in 1990. The findings of the literature review by IRC show that existing water sources are becoming polluted by inadequate disposal of solid and liquid waste and by uncontrolled use of fertilizers and pesticides. There is growing evidence that water sources are decreasing in quantity due to deforestation, erosion and over-utilization. More information is needed on the scope of the problem and on possible technical and socio-economic solutions including legislative measures. A main problem appears to be the lack of awareness concerning water source problems among authorities and communities in developing countries, as well as among staff from ESA-supported projects.

The draft conclusions of this assessment were evaluated and confirmed at a meeting of the advisory group on this subject, including participants from the Robens Institute and the British

Illustration from "Water Harvesting in Five African Countries", the UNICEF/IRC publication.

Geological Survey in the United Kingdom, and WHO. At the end of the year, the planned publication on water source protection was nearing completion.

WATER HARVESTING

In the arid and semi-arid regions of the world millions of people are forced to use unreliable water sources. In other regions of the world, erratic rainfall and increased pressure on existing water sources call for improvement of water harvesting and conservation methods. Some suggestions have been developed on rooftop harvesting, but very little attention has been directed to combining the catchment areas and storage structures that make up the surface run-off harvesting systems. Overview of rainwater harvesting systems and designs of a range of surface run-off water harvesting systems would be needed to satisfy information needs of planners, project staff and community development workers.

Existing experiences on water harvesting in a number of countries were brought together with support from UNICEF and from DANIDA. IRC published part of the findings of this study jointly with UNICEF in the Occasional Paper Series under the title "Water Harvesting in Five African Countries". The study in Botswana, Kenya, Mali, Tanzania and Togo showed that this potential source is under-rated and requires a much stronger component of capacity building at the community level than is the case in most projects. Wider development and promotion of this area was done through an article by IRC entitled "Safe Water from Rooftops and Tanks", which featured in the UNDP press kit for the Safe Water 2000 Global Consultation in New Delhi.

At the end of the year IRC was preparing a draft manuscript for external review on the options to use surface water run-off. DANIDA is funding this activity, which is scheduled to be published in IRC's Technical Paper Series.

SANITATION

Sanitation and solid waste management are receiving more emphasis in developing countries' government policies, making adequate information support very necessary. Accordingly, IRC increased its information holdings on sanitation and solid waste management, focusing on adequate systems for low-income urban and rural areas.

The UNICEF International Child Development Centre in Florence, Italy asked IRC to contribute a chapter on sanitation to their upcoming publication entitled "Children and Parasites". The chapter deals with methodology for and experiences on community-based sanitation programmes, appropriate technology options for rural and peri-urban conditions and for upgrading existing facilities, and the positive effects of sanitation interventions on the prevalence of parasitic infections. The publication further discusses the vulnerability of children; the global significance and the experience of control of parasitic diseases; health education and chemotherapy as control approaches; and the effects of the diseases on economic aspects. The UNICEF publication "Children and Parasites" is primarily meant for health staff at different levels dealing with practical problems.

Other activities included completion of a draft publication about on-site sanitation for the IRC Occasional Paper Series.

*WATER
QUALITY*

IRC participated in a consultation on water, sanitation and health in rural areas organized by the Community Water Supply and Sanitation Unit at WHO Headquarters at the end of June. More specifically, water quality issues were discussed with 20 participants including representatives from Morocco and Tunisia. The resulting document should attract attention once again to this subject, which has been somewhat neglected during the last decade as a result of the great attention paid to coverage, quantity and access.

SUSTAINABILITY

In early July, IRC's experiences were presented in a five-day workshop on sustainability in water supply sanitation programmes in Switzerland. The modules prepared for the course "Management for Sustainability" (see also under Training and Briefing below) formed a useful basis for the presentations. 'Aguasan', the informal group of key Swiss actors in the sector, organizes these annual meetings which aim to exchange views on key issues and contribute to more effective projects. The main case study used at this workshop concentrated on Cameroon, which has been receiving Helvetas support for 25 years. One of IRC's long-time consultants had been invited specifically to ensure that adequate consideration was given to community management and the role of women therein.

*TRAINING AND
BRIEFING*

Training and briefing activities are of increasing importance in IRC's work. Their usefulness is evidenced by the increase in requests for these services, in particular from project field staff and persons from developing countries. In 1990 the general briefing programme attracted 50 participants, mainly professional staff preparing themselves for their field postings in water supply and sanitation programmes in developing countries.

During 3- to 10- day standard or tailor-made briefing programmes participants make use of the collection of documents available at IRC and benefit from individual support from various IRC staff members or outside specialists. With the use of these services, participants prepare information packages and appropriate workplans for their work in the field.

Together with specialized training institutes in the Netherlands IRC also organizes short training courses on key subjects in the sector. An increasing number of participants from developing countries attends these courses, sponsored by bilateral as well as multilateral donor agencies. Three successful short training courses took place in 1990. Sixteen participants followed the IRC-MDF course "Management for Sustainability in Water Supply and Sanitation Programmes in Rural and Peri-urban Areas", a regular course which was offered twice this year. They came from projects in Bhutan, India, Nigeria, Saudi Arabia, Sri Lanka, Sudan, Tanzania and Yemen. Sponsoring agencies included DANIDA, DGIS/Dutch Embassy Delhi, Finnwater Corporation, GTZ, SIDA, UNICEF, and two Dutch consultancy firms ETC and Euroconsult, which execute projects under Dutch bilateral funding. Six individuals from different agencies participated in the course "Community Water Supply and Environmental Sanitation in Urban Low-income Areas", a regular course organized twice a year by IHS and IRC. After each course participants were asked to evaluate content and presentation, with suggestions for improvements being considered for future courses.

These programmes provide a useful mechanism to transfer information to selected target groups through efficient utilization of IRC's professional expertise and documentation resources. Issues around which the activities centred are in close conformity with the focus of IRC's work.

*PROWESS
Workshop*

IRC has been collaborating with the UNDP/PROWESS Group to spread the latter's participatory training approach. In November, eleven participants from Netherlands-based institutes working in the sector and IRC professional staff took part in a workshop held at IRC on participatory training. The training process is based on the SARAR approach which involves five characteristics: Self-esteem, Associative strengths, Resourcefulness, Action planning, and Responsibility. Lyra Srinivasan, PROWESS Senior Participatory Training Advisor, continued a number of exercises with IRC staff on the days following the workshop. Various IRC staff members had already applied elements from the PROWESS approach in training in earlier courses and in the field, and exchanged ideas and experiences with the PROWESS advisor.

4. Public Information and External Relations

EXTERNAL RELATIONS

During the course of 1990, regional end-of-Decade consultations were held all over the world to assess the work done in the 1980s, and to define approaches for the 1990s. IRC participated in three of these consultations: in Abidjan for Africa, in Manila for Asia in Recife for Latin America as well as in the Global Consultation "Safe Water 2000" in New Delhi. IRC was invited to contribute to the task force on priorities and activities of the Water Supply and Sanitation Collaborative Council. Following New Delhi and the earlier work by the Temporary Working Group on Communication of Information UNICEF, WHO and IRC took the lead in the development of a strategy for Public Information and Promotion (PIP) for the sector.

At the consultation itself, IRC demonstrated the application of technical information exchange via CD-ROM (compact disk - read only memory) and related, more advanced information handling techniques in a stand which was visited by many participants in the consultation.

At the end of the year a Core Group on PIP was formed, comprising 30 representatives from national sector agencies and external support agencies: 6 participants from Bangladesh, Brazil, Guinea Bissau, Indonesia, Mexico, and Nigeria; 16 from UN organizations, and the remaining participants from bilateral donor organizations, non-governmental organizations and professional institutions. Also a working group was established consisting of specialists from UNICEF programme communication, UNICEF water section, UNDP Information and IRC.

This group produced a first outline of the work to be undertaken on communication in the 1990s based on the lessons from the Decade and the outcome of the discussions in the various regional and global meetings.

Newsletters

In June a survey was conducted among the readers of the English Newsletter. The 18% feedback reflected a growing number of subscribers from developing countries. Nearly 90% of the readership was very satisfied with the readability and 70% with the appearance. The actual number of readers through shared copies is more than 15,000. Seven out of ten readers order publications

based on announcements in the Newsletter. A range of improvements on layout and contents was suggested which will gradually be followed up in both the English and French Newsletters.

Publications

IRC distributed nearly 2700 of its publications this year. Several new publications by the Information Management and Programme Activities groups were in various stages of development. With advanced computer software, nearly all desk top publishing is now done in-house, permitting better control over the appearance of the final product. New titles included French translation of "Handpumps, issues and concepts in rural water supply programmes" (no. 25 in the Technical Paper Series), and one new title in the Occasional Papers Series on water harvesting in five African countries.

Workshops

- The inter-ministry coordination team of the PSSC project in Malawi organized a training workshop with all the extension workers in the project from the various ministries concerned (i.e. water, health and community services). IRC provided inputs.
- In November an IRC consultant assisted the Malawi and Zambia PSSC project teams in holding the second part of the course on local preparation and production of manuals for use in the project.
- One of IRC's Project Research Officers facilitated a five-day workshop in the Integrated Infrastructure Upgrading Project in Phnom Penh, Cambodia, on community participation and hygiene education in May.
- On behalf of WHO, IRC organized the final meeting to review and modify the draft WHO manual "Handbook for Financing Sustainable Community Water Supply and Sanitation Projects". Various IRC staff participated in this workshop which was held at IRC on 29 and 30 May.
- From 30 May to 1 June IRC organized a workshop in the Hague on Drinking Water Source Protection - problems, causes and needs, with 11 Dutch and international experts. Two IRC staff members participated in the workshop.

- For the UNICEF-assisted Water Supply and Sanitation programme in rural Mali a local consultant was assisted in June to prepare a study prior to the mid-term evaluation. Findings were discussed at a workshop which combined groups of project staff and representatives from ministries. Participants in an Objective Oriented Project Planning exercise developed a set of strategic objectives based on strengths and weaknesses analysis. IRC staff contributed to the study and workshop.
- Together with five UN organizations, six bilateral donors and six other NGOs, IRC participated in a PROWWESS/UNDP and IDRC-sponsored international workshop on community monitoring and evaluation at WHO at the end of June. Workshop discussions were based on the draft publication "Participatory Evaluation: Tools for Managing Change in Water and Sanitation" by D. Narayan-Parker. IRC contributed to this workshop.
- Workshops were held in India and Thailand with inputs from IRC to get the pilot phase of the project "Review of Operation and Maintenance Aspects of Urban Sanitation Systems in Low-Income Areas" underway. In India the executing agency is the Human Settlements Management Institute (HSMI) under the Housing and Urban Development Corporation (HUDCO). In Thailand, the National Housing Authority (NHA) and Chiang Mai University work together on the research.
- A background document prepared by members of the Operations and Maintenance Working Group was reviewed in a meeting of the group in Geneva at WHO from 19-22 June 1990. IRC's programme staff contributed to this work.
- In early July, two IRC staff members contributed to the five-day workshop on sustainability in water supply sanitation programmes in Switzerland, organized by Aguasan.
- Towards the end of the advisory mission to ITN Philippines in September IRC's information management consultant conducted a staff development workshop to relate his findings to the professional staff of the International Training Network Centre.

- Participating in the ITN workshop with the directors of ITN centres in Calcutta in September, one Senior Programme Officer contributed to the discussions to review the status of the centres and the future of the ITN programme.
- In Colombia introductory workshops were held and communities targeted for transfer of slow sand filtration were pre-selected. In November a first training workshop took place in Cali with 12 participants from the 4 regions in preparation for the participatory diagnosis at the demonstration sites. IRC assisted in these workshops.
- A Participatory Training Workshop was organized by UNDP/PROWESS. IRC collaborated with the UNDP/PROWESS group to spread the latter's participatory training approach. In November IRC staff and 11 participants from Netherlands-based institutes working in the sector and IRC professional staff attended a workshop on Participatory Training.

Lectures

Various IRC staff members lectured on behalf of various international courses at the Institute of Housing Studies in Rotterdam and the Institute for Hydraulic Engineering in Delft. Course participants from both institutes came to IRC for introductions to the organization and its services. Lectures were also requested by the Agricultural University of Wageningen, Technical University Delft, University of Maastricht, and KfW in Germany. Subjects included community participation, role of women, hygiene education, sanitation, slow sand filtration and pre-treatment, and rural development.

Visitors

During 1990 more than 250 individual visitors came to IRC to be introduced to IRC's work and publications or to use the documentation unit. From various international courses in the Netherlands three groups of developing country students were introduced to IRC's work and services.

Media Coverage

Prior to the New Delhi Global Consultation the Radio Nederland World Service interviewed IRC's Director about the state-of-the-art in the sector. A special reporter from the World Service covered the New Delhi Global Consultation, and with the assistance of IRC made more than 30 feature programmes with participants in

various languages. The Dutch World Service and IRC entered into an agreement to regularly contribute feature programme ideas and interviews on water with IRC staff and developing country visitors in various language programmes.

*PUBLIC
RELATIONS*

The most visible suggestion was the change to a more consistent and modern house style for all of IRC's printed materials. To strengthening the listening and feedback functions of IRC in its various relations with the public was also suggested.

Immediate follow-up was given through production of various new promotional leaflets and brochures for dissemination during the New Delhi Global Consultation in September. They included a new organization brochure and leaflets about information management and the newly published List of Basic Publications on Community Water Supply and Sanitation.

Later in the year a new house style was introduced, which included a modification in name to "IRC International Water and Sanitation Centre". All of IRC's material printed as of 1991 will reflect this updated, more colourful house style.

Papers Presented

During the course of the year, various papers were presented by IRC at international meetings and in the context of ongoing project work.

- On behalf of IRC, a joint paper entitled "The Challenge of Sustainable Development in Community Water Supply and Sanitation", presented at the Fourth African Water Technology Conference held in Nairobi, Kenya from 20-22 February;
- with CINARA's social team a paper dealing with the role of social scientists in water projects, the methodological aspects of evaluation work, juntas administradoras, and the monitoring process of water supply systems;
- a paper on an action-learning approach for village water committees in the Piped Supplies for Small Communities Project;
- a discussion paper on institutional development for the Indian/Dutch water projects;

- with WHO, a summary paper on operation and maintenance for distribution at the New Delhi Global Consultation;
- for a publication entitled "Children and Parasites" of the UNICEF International Child Development Centre in Florence, Italy, a chapter on sanitation.

Articles

- Tjiok, T.K. (1990). Securing Disinfectant Supply by Local Generation, Conference paper, Water and Wastewater 90 Conference, Barcelona, April 1990.
- Visscher, Jan Teun (1990). Slow Sand Filtration : design, operation and maintenance. In : Journal American Water Works Association, vol. 82, no. 6.
- Parker, Stephen J. (1990). Developing information systems in the water and sanitation sector. In : Information Development, vol. 6, no. 4.
- Jong, Dick de and Lee, Michael (1990). Water from Rooftops and Tanks. Paper for UNDP press kit prepared by UNDP for the September Global Consultation "Safe Water 2000", New Delhi, September 1990.
- "International Drinking Water Decade" An interview with the Public Information Officer in CONtekst (10) nr 4, 1990, a Dutch magazine for development workers.

5. General Management and Organization

Governing Board IRC's Governing Board convened in April and October. In April IRC's programme was reviewed on the basis of the Annual Plan 1990, the Indicative Medium Term Plan 1990-1992, and an overview of the past year's activities. Attention was also paid to the presentation of a statement regarding IRC's mission, which was prepared on request of the Board members. Staff members made presentations on three areas of IRC's involvement - water resources management, community-based management, and information management.

In October, the Indicative Medium Term Plan 1991-1993 and the Indicative Annual Plan and Budget 1990 were presented, both of which were approved by the Board members. IRC's concentration on information and communication was emphasized at the meeting. Attention was also focused on the Global Consultation "Safe Water 2000", held in New Delhi in September, and follow-up work for IRC in the area of public information and promotion.

Mr. David Howarth, Programme Manager for the UNDP/World Bank Water and Sanitation Programme joined IRC's Governing Board as of October. As new member, Mr. Howarth replaces Mr. Curt Carnemark, Chief of the World Bank's Water and Sanitation Division, Infrastructure and Urban Development Department.

Management Team As in previous years, staff recruitment and the compilation of a new Annual Plan and Budget for 1991 and an Indicative Medium Term Plan for the coming three years required the necessary attention. The Management Team is composed of the Director, Senior Programme Officer, Senior Information Officer, and the Administrator. Additionally, preparation and follow-up work around "Safe Water 2000" in New Delhi and IRC's direction with respect to public relations and house style were discussed.

Personnel IRC employs a staff of approximately 30 individuals of various nationalities of which 60% are women. In 1990 the staff included six engineers (planning, public health and sanitary), three sociologists/anthropologists, a psychologist, a journalist, one information specialist and two documentalists.

Supplementing its permanent staff, IRC regularly makes use of consultancies for various short and longer term assignments. IRC entered into contacts with 29 individuals and agencies for among others, sanitation field studies; literature reviews on various topics; review, translation and editing of publications and manuals; preparation of information materials; development and promotion of training and briefing programmes; and input in slow sand filtration, piped supplies, rainwater harvesting, financing, information issues, and automation.

Staff Changes

Staff and consultant reallocations, during 1990, in chronological order were as follows: Stephen Parker worked for IRC full time on capacity-building for information management until April 1990. Due to his relocation to Sri Lanka he has since then been working for IRC on a consultancy basis. In 1991 his services will be contracted to raise the awareness on information management issues and especially to undertake country-level support activities in East-Africa and Asia.

Dr. Inyambo Nyumbu, previously Decade Advisor in Zambia, continued his consultancy for IRC, begun in August of last year, in the role of advisor to the PSSC project in that country. Dr. Nyumbu also provided advisory services for PSSC activities in Malawi, contributed to work on a cost recovery manual being prepared for WHO, and explored opportunities for IRC in the areas of, among others, cost recovery, evaluation training, and community self-improvement training.

Michael Lee, water harvesting consultant, continued his assignment at IRC, which began in September 1989. Until August, he broadened IRC's knowledge base on the subject of rainwater harvesting, preparing a draft Technical Paper to be published jointly by IRC and DANIDA, and finalized a report on rainwater harvesting in five African countries, funded by UNICEF. In the area of water source protection, Dr. Lee finalized a draft Occasional Paper about that subject, and prepared outlines for future activities.

As of October 1990, Programme Officer Michael Seager took up a position with UNDP as Investment Planning Adviser to the Ministry of Energy, Minerals and Water of the United Republic of

Tanzania. He forms part of a newly set up Sector Advisory Team within the Ministry, backstopped by the UNDP/World Bank Regional Water and Sanitation Group.

Frances Delaney, formerly Senior Programme Officer with IDRC's Information Sciences Division started on 1 October on a four-month assignment to assist country-level information activities and improvement of the effectiveness of the information-communication process.

Eveline Bolt joined IRC on a temporary basis from October 1990. She has been worked for several years in the field of rural sanitation and hygiene education in Nepal. Her main areas of concern are co-ordination of standard briefing programmes and short training courses as well as information gathering on sanitation and solid waste management. For next year this will be complemented by involvement in some other IRC areas, mainly in the field of hygiene education.

Phil Evans, anthropologist, joined IRC in late November. Mr. Evans worked for five years in Lesotho (UNDP/World Bank), 2 1/2 years in Zimbabwe (NORAD) and Namibia (UNICEF). As Project Research Officer Mr. Evans will initially prepare a write up on his experience in a rural sanitation project in Lesotho. He will also do a preliminary literature review concerning community-based management of water schemes. On this subject he will also assist in the development of proposal to develop guidelines on this issue.

Eveline Kamminga started work at IRC in mid-December, initially until 1 May 1991. During the last seven years she worked abroad, five of which in Africa. Her most recent posting was in Mali. At IRC she will review the existing literature on economic use of water and time gains by women and prepare a preliminary project proposal for a quantitative field investigation into the use and benefits of time and water gains for women, and their economic use of these benefits.

Other Staff Matters Two personnel meetings were held in 1990. In January, discussions on IRC's planning documents and on organization and operations were held. In December, a staff member from the Ministry of Housing, Physical Planning and Environment made a presentation on internal office environment. This year five staff members received 'awards' for five years of effective and loyal service.

Automation IRC moved up from Word Perfect 4.2 to Word Perfect 5.0, and more Tulip PCs were acquired.

In November, a MINISIS specialist from IDRC, Canada spent two weeks at IRC to instruct the users on advance applications of the system. He also looked at possible means to improve IRC's databases. As a result of the visit the Documentation Unit now has the capacity to order its publications directly via the MINISIS system.

The central address system running on the MINISIS software was further updated. Country names in the system were standardized according to the ISO standard. UNICEF, WHO, DANIDA and SIDA were among the agencies which provided updated lists of their water staff in the field, which were integrated in the CAS.

Budget The 1990 operating budget amounted to Dfl 3,300,000 (approx. US\$ 1,823,000). The core subsidy of Dfl 1,944,000 from the Netherlands Ministry of Housing, Physical Planning and Environment and the Directorate-General for International Co-operation of the Foreign Ministry remained the same as in 1989.

This budget is meant for IRC's general information exchange work and clearing house role, as well as for development of its information base, general management and acquisition of externally funded projects. These extra-budgetary resources for work with and in developing countries amounted to slightly more than Dfl 2,900,000 (US\$ 1,602,000).

* US\$ 1.00 = approx. Dfl. 1.81

6. Emphasis 1991

As the international focus of activities directed towards developing countries changes to cope with mounting environmental concerns and problems facing peri-urban areas, it is essential that IRC adjusts its focus to be able to continue its contributions towards priority areas development work. Its long time focus on drinking water supply and community sanitation will thus be consolidated, and activities pertaining to peri-urban areas, and to environmental issues, including water resources and waste management, will receive increasing attention.

The strategic approach towards these issues consists of three components: Information Management, Knowledge Enhancement, and General Information and Documentation Support.

The Information Management programme will, in the coming years, focus on information management at country level. Close cooperation will be sought with local partners and external support agencies dealing with information, to develop comprehensive approaches towards improving information management. IRC will strive to integrate initiatives on technical information, project/sector information, management information and information resulting from monitoring and evaluation, with public information. In cooperative activities IRC's main contribution will be in technical information, in which the Technical Information Exchange (TIE) Strategy, a consolidated approach towards the development of national information management capacities and the implementation of information exchange activities at country level, will be applied. This includes the development of information handling methods and tools.

In the area of General Information and Documentation Support, the Newsletter will be focused on new developments pertaining to work at the country and sub-country level. Measures will be taken to improve the quality of the documentation base and to explore ways to make IRC's documentation holdings directly accessible externally.

Knowledge Enhancement will consist of information and communication-oriented activities regarding specific priority issues and will focus on the central theme of community-based approaches. This necessarily implies integration of socio-economic aspects with technical aspects and integration of water supply, sanitation and hygiene education. Issues related to community management and involvement will receive particular emphasis. Evaluation work and training-oriented activities will be stepped up accordingly.

During 1991 a special effort will be devoted to expand and deepen IRC's information base regarding issues which form major stumbling blocks in water and sanitation, and related environmental developments in the developing countries. This effort is taken to ensure a continued effective contribution by IRC through its various projects, towards work by and with partners at the country level, and towards more general development by partners at regional and global levels which support such 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. Kakebeke
(Treasurer)

Head, International Environmental
Affairs Department,
Directorate General for Environmental Protection
Netherlands Ministry of Housing,
Physical Planning and Environment

Mr. P. Feith
(until March)

Chief, International Organizations Department
Directorate General for International Co-operation
Netherlands Ministry of Foreign Affairs

Mr. I.M. de Jong
(from March)

Chief, International Organizations Department
Directorate General for International Co-operation
Netherlands Ministry of Foreign Affairs

Dr. R.C. Harkema

Chief, Sector Programmes
Co-ordination and Technical Advice Department
Directorate General for International Co-operation
Netherlands Ministry of Foreign Affairs

Mr. A.H. Rotival

UNDP/WHO Co-ordinator for the
International Water Supply and Sanitation Decade
United Nations Development Programme

Dr. J. Christmas

Chief
Water and Environmental Sanitation Team
United Nations Children's Fund

Mr. C. Carnemark

Chief, Water and Sanitation Division,
Infrastructure and Urban Development Department
The World Bank

Dr. D. Warner
(observer)

Manager, Communication Water Supply and
Sanitation Unit
Division of Environmental Health
World Health Organization

II List of IRC Staff Members

Director

- * Hans M.G. van Damme

Programme Activities

- * Jan Teun Visscher Senior Programme Officer
Dept. Head Programme Activities
- Teun F. Bastemeijer Programme Officer
Training and Maintenance Development
- Ms. Marieke T. Boot Programme Officer
Evaluation, Hygiene Education
- Michael Seager Programme Officer
Piped Supplies for Small Communities
Community-Based Financial Management
- Jo E.M. Smet Programme Officer
Technology Development
- Ms. Christine van Wijk-
Sijbesma Programme Officer
Community Education and
Participation and Roles of Women
- Ms. Lizette A.M. Burgers Research Officer
Hygiene Education
- Ms. Mary Boesveld Consultant, Community Participation and
Demonstration Project Support
- Michael D. Lee Consultant, Technology Development
until August

- * *Members of Management Team*

Ms. Madeleen Wegelin-Schuringa	Consultant, Social Sciences
Ms. Anneke Groenendal	Programme Assistant
Ms. Lupe Salazar from September	Programme Assistant
Ms. Brigitte M. Guillot until April	Programme Assistant

Consultants Working in Developing Countries

Dr. Inyambo Nyumbu	Consultant, Piped Supplies for Small Communities and Community-Based Financial Management
J. Stephen Parker	Consultant, Technical Information Exchange

Technical Information Management

* Han Heijnen	Senior Information Officer Dept. Head Technical Information Management
Ms. Bettie E. Westerhof	Senior Documentalist
Cor H. Dietvorst	Documentalist
Ms. Hanneke Barten until October	Programme Assistant
Ms. Diana van der Molen from July until December	Documentation Assistant

* *Members of Management Team*

Public Information

Dick de Jong Public Information Officer

Administration and Finance

* Krijn M. Peterse Administrator

 Ms. Nicolette Wildeboer Management Assistant

 Ms. Loekie Broersma Temporary Management Assistant
 from September
 until December

 Ms. Hulda W. de Vries Staff Assistant

 Ms. Hanneke Cusell -
 Schaap Bookkeeper

 Ms. Irene van Dieten Newsletter Assistant

 Ms. Izabel Wimmers Receptionist

 Ms. Carmen Sloom Publication Assistant

 Ms. Lia Wahab Publication Assistant

 Ms. Lauren Wolvers Image Processor

 Michel van der Leest Office Assistant

Mr. Michael Seager joined UNDP as Investment Planning Advisor to Tanzania's Ministry of Energy, Minerals and Water from 1 October.

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

* *Members of Management Team*

III. IRC's Organization and Strategy

In 1981, coinciding with the beginning of the International Water Supply and Sanitation Decade, IRC became an independent non-profit organization, which allowed for impartial and effective expenditure on water and sanitation-related projects. The international position of IRC is reflected not only in its mandate and working relationships, but particularly in its Governing Board. This comprises representatives of the international agencies WHO, the World Bank, UNDP and UNICEF, and of the two sponsoring Netherlands ministries, the Ministry of Housing, Physical Planning and Environment, and the Ministry of Foreign Affairs (Directorate General for International Co-operation). The members of the Governing Board are listed in Appendix I. IRC acts as Collaborating Centre for Community Water Supply and Sanitation for WHO.

Over the years, IRC has developed a broad approach concerning the commodity information. Its mission in a nutshell is mobilization of information and advancement of communication, so as to enhance the knowledge of all parties concerned, in support of water supply, sanitation and water and waste management services for people in developing countries.

IRC's long term goal is the availability, in all countries, of self-sufficient and effective institutional facilities - formal or informal - in support of national and sub-national planning and management.

IRC's strategic approach has three components:

- (i) information management, with an emphasis on capacity building and the development of information tools;
- (ii) general information and documentation support, including clearing house functions, networking and documentation services; and
- (iii) knowledge enhancement on priority issues, concentrating on the structuring of information, the development of communication projects, and the promotion of application of relevant information on such issues as community management, roles of women, and community-based water resources management; in many cases field and/or literature research form part of this activity.

Through this strategic approach information is gathered in both documented and other forms, and through communication as a process, is applied as a tool for the

enhancement of knowledge among partners working in the sector. Together, this approach contributes to increased efficiency and greater effectiveness of programmes and projects and consolidated capacities at country level.

Projects, which in principle require external funding, are developed directly and indirectly in consultation with target groups and their support agencies. An overriding consideration in IRC's multidisciplinary work is the integration of various technical and non-technical aspects. As much as possible activities are carried out and supported by staff in the countries concerned. In the spirit of Technical Cooperation among Developing Countries (TCDC), IRC aims to establish links between the countries with which it works. IRC works closely together with UNDP, UNICEF, WHO and the World Bank. It also co-operates with other UN agencies, financial donors and non-governmental organizations.

IV. List of Available Publications

TECHNICAL PAPER SERIES

- Participation and Education in Community Water Supply and Sanitation Programmes: a Literature Review. (TP 12**) 2nd revised edition, 1981
- Public Standpost Water Supplies. (TP 13**) 1979
- Public Standpost Water Supplies: a Design Manual. (TP 14**) 1979
- Evaluation for Village Water Supply Planning. (TP 15) 1980
- POETRI, Programme on Exchange and Transfer of Information: Reference Manual, Volume I. (TP 16*) 1981
- Community Participation in Water Supply and Sanitation: Concepts, Strategies and Methods. (TP 17**) 1981
- Small Community Water Supplies in Developing Countries: Technology of Small Water Supply Systems in Developing Countries. (TP 18*) 1981
- Guidelines on Health Aspects of Plumbing. (TP 19**) 1982
- Practical Solutions in Drinking Water Supply and Wastes Disposal for Developing Countries. (TP 20) 1982
- A Groundwater Primer. (TP 21) 1983
- Participation of Women in Water Supply and Sanitation, Roles and Realities. (TP 22) 1985
- Renewable Energy Sources for Rural Water Supply. (TP 23) 1987
- Slow Sand Filtration for Community Water Supply. (TP 24) 1987
- Handpumps, Issues and Concepts in Rural Water Supply Programmes. (TP 25) 1988
- Ten Years of Experience: Community Water Supply and Sanitation Programme, Pokhara Western Development Region, Nepal. (TP 26) 1988
- Hygiene Education in Water Supply and Sanitation Programmes. (TP 27) 1988

OCCASIONAL PAPER SERIES

- The Colombian Field Manuals and Training Guides for the Promotion of Community Participation in Water and Sanitation Schemes. (OP 2) 1983
- Planning and Evaluation for Community Water Supply and Sanitation: a Literature Review and a Selected and Annotated Bibliography. (OP 4) 1982

*) Also available in French

***) Also available in Spanish from CEPIS, Casilla Postal 4337, Lima 100, Peru

- Making the Links: Guidelines for Hygiene Education in Community Water Supply and Sanitation with Particular Emphasis on Public Standpost Water Supplies. (OP 5) 1984
- The Environment of Simple Water Supplies: a Selected and Annotated Bibliography in Support of Public Standpost Water Supplies. (OP 6) 1984
- Drinking Water Supply and Sanitation: Co-operation between Countries and Agencies. (OP 7) 1986
- Maintenance Systems for Rural Water Supplies. (OP 8) 1987
- Artificial Groundwater Recharge for Water Supply of Medium-Size Communities in Developing Countries. (OP 9) 1987
- What Price Water? User Participation in Paying for Community-Based Water Supply. (OP 10) 1987
- Training Community Motivators in Water Supply and Sanitation. (OP 11) 1987
- Community Participation and Women's Involvement in Water Supply and Sanitation Projects, a Compendium Paper. (OP 12) 1988
- Water Supply and Sanitation in Primary School Education in Developing Countries, a Preliminary Study. (OP 13) 1988
- Water Harvesting in Five African Countries. (OP 14) 1990.

BULLETIN SERIES

- Global Workshop on Appropriate Water and Waste-Water Technology for Developing Countries. Report on Proceedings. (B7) 1973
- Slow Sand Filtration for Community Water Supply in Developing Countries: a Selected and Annotated Bibliography. (B9) 1977
- Public Standposts for Developing Countries, Proceedings of an International Expert Meeting, Achimota, Accra, Ghana. (B11) 1978
- Participation and Education in Community Water Supply and Sanitation Programmes: a Selected and Annotated Bibliography. (B13) 1979
- Community Education and Participation in the IRC Slow Sand Filtration Project. Report of Proceedings. (B14) 1979
- Slow Sand Filtration for Community Water Supply in Developing Countries, Report of an International Appraisal Meeting, Nagpur, India. (B16) 1981
- Report of a Global Seminar on a Modular Approach in Small Water Supply Systems Design, Jakarta, Indonesia. (B17) 1981
- Informe del Seminario Internacional sobre Filtración Lenta de Arena Para el Abastecimiento Público de Agua en Países en Desarrollo. (B18) 1983

**) Also available in French*

****) Also available in Spanish from CEPIS, Casilla Postal 4337, Lima 100, Peru*

TRAINING SERIES

- Manual for Caretakers of Slow Sand Filtration. (TS 1**) 1985
- Evaluating Water Supply and Sanitation Projects, Course Modules and Guide for Course Moderators. (TS 2) 1987
- Human Resources Development for Water Supply and Sanitation, Case Studies on Togo, Sri Lanka, the Philippines, Zaire and Thailand. (TS 3) 1987
- Training Skills for Supervisors. (TS 4), 1987
- Community Self-Improvements in Water Supply and Sanitation. (TS 5), 1988

REFERENCE SERIES

- Directory of Organizations involved in Community Education and Participation in Water Supply and Sanitation. (RS1) 1983
- Interwater Directory of Sources of Information and Documentation on Community Water Supply and Sanitation. (RS2) 1986
- List of Basic Publications on Community Water Supply and Sanitation, a Selected Bibliography and Glossary of Expressions. (RS3) 1987
- Interwater Thesaurus for Community Water Supply and Sanitation. (RS4) 1987
- INFO-IMPACT - Report on a Working Meeting on Information Exchange for Water Supply and Sanitation. (RS5) 1988
- Framework for Technical Information Exchange. (RS6) 1987

OTHER PUBLICATIONS

- Symposium on Community Water Supply in Developing Countries. Report of Proceedings. 1977
- Procédures Simplifiées pour l'Examen de l'Eau. 1983
- Volanta-Pompe à Main, Instructions d'Entretien. 1986.

V. Country/Project Matrix

This matrix contains a list of countries in which specific activities were undertaken in 1990, (see also map on page 4 and 5) in addition to general information exchange in more than 100 countries.

COUNTRIES	ACTIVITIES											
	<i>Technical Information Management</i>	<i>Piped Supplies 1)</i>	<i>Slow Sand Filtration 1)</i>	<i>Pre-treatment 1)</i>	<i>Monitoring and Evaluation 2)</i>	<i>Health/Hygiene Education 2)</i>	<i>Women 2)</i>	<i>Low-cost Urban Systems 2)</i>	<i>Water Resources 2)</i>	<i>Alternative Energy Sources 2)</i>	<i>Low-cost Sanitation 2)</i>	<i>Planning 2)</i>
Africa												
Botswana									*			
Ethiopia	*											
Guinea Bissau											*	
Kenya					*			*				
Malawi		*										
Mali								*				
Nigeria											*	
Tanzania					*	*		*		*	*	*
Togo								*				
Uganda	*											
Zambia		*			*					*	*	
Zimbabwe		*										
Asia												
Bangladesh					*							
Cambodia								*				
India	*				*		*	*		*		
Indonesia	*											
Pakistan					*							*
Thailand								*		*		
Vietnam								*				
Eastern Mediterranean												
Yemen Arab Republic											*	
Latin America												
Colombia		*	*					*			*	
Guatemala					*	*						
Honduras					*	*						

1) development and demonstration projects

2) advice, monitoring and evaluation work and/or publications

VI. List of Abbreviations

AIT	Asian Institute of Technology
AMREF	African Medical Reserach Fund
CD-ROM	Compact Disc - Read Only Memory
CEC	Commission of European Communities
CEHI	Caribbean Environmental Health Institute
CEPIS	Pan-American Centre for Sanitary Engineering and Environmental Sciences
CESI	Country External Support Information
CIEH	Inter-African Committee for Water Resources Studies
CINARA	Centro Inter-regional de Abastecimento y Remocion de Agua
CREPA	Centre Regional pour l'Eau Potable et l'Assainissement à Faible Cout
DANIDA	Danish International Development Agency
DGIS	Netherlands Directorate General for International Cooperation
ESA	External Support Agency
FINNIDA	Finnish International Development Agency
GTZ	German Agency for Technical Cooperation
HED	Health Education Department
HRD	Human Resources Development

HSMI	Human Settlements Management Institute
HUDCO	Housing and Urban Development Corporation
IDWSSD	International Drinking Water Supply and Sanitation Decade
IHS	Institute for Housing Studies
IHE	Institute of Hydraulic and Environmental Engineering
INFO-IMPACT	Information Exchange Plan of Action (process towards the implementation of technical information exchange)
IMC	Institute for Medical Cooperation
IRC	International Water and Sanitation Centre
IRC/WD	International Reference Centre for Waste Disposal
ITB	Institute of Technology Bandung
ITN	International Training Network for Low-Cost Water Supply and Sanitation
KfW	Kreditanstalt für Wiederaufbau
LWUA	Local Water Utilities Administration
MDF	Management for Development Foundation
NHA	National Housing Authority
NORAD	Norwegian Agency for International Development
NOVIB	Netherlands Organization for International Development
NWFP	North West Frontier Province

PAHO	Pan-American Health Organization
PEPAS	Western Pacific Regional Centre for the Promotion of Environmental Planning and Applied Studies
PLADEICOP	Plan de Desarrollo Integral para la Costa Pacífico
PROWESS	Promotion of the Role of Women in Water and Environmental Sanitation Services
REPISISCA	Red Panamericana de Información y Documentación en Ingeniería Sanitaria y Ciencias del Ambiente
REGIDESO	Water Supply Corporation of Bujumbura
RWSG	Regional Water and Sanitation Group
SARAR	Self Esteem, Associative Strength, Resourcefulness, Action Planning, Responsibility
SDI	Strategic Dissemination of Information
SNV	Netherlands Development Organization
TIE	Technical Information Exchange
TRANSCOL	Transfer of Slow Sand Filtration in Colombia
TWG-INFO	Temporary Working Group on the Communication of Information
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Fund for International Development
UNIVALLE	University of Valle (Colombia)

USAID	United States Agency for International Development
VROM	Netherlands Ministry of Housing, Physical Planning and Environment
WASH	Water and Sanitation for Health Project
WEDC	Water, Engineering and Development Centre, University of Loughborough
WHO	World Health Organization

