

In Uganda, 1991 was a year for large scale efforts towards the improvement of information management for water supply and sanitation, and elsewhere in recent months information management activities have also been moving ahead full swing. Two international meetings took place in the third week of November, one in the Hague and one in Brussels. In that same period IRC staff provided training and technical support to information and documentation staff from Indonesia. The items in this special issue on information management report about these activities.

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WORKSHOP ON INFORMATION MANAGEMENT MAKES WORK PLAN FOR NEXT TWO YEARS

Alongside the Global Consultation of September 1990 in New Delhi, a fresh impetus was created by a group of sector institutions active in information exchange, when they formed the Informal Information Group. This group aims to foster capacity building by proposing a common information management strategy for the sector and by collaborating closely with each other in supporting the implementation of the strategy.

In its Global Forum at Oslo the Water and Sanitation Collaborative Council acknowledged the concerns put forth by the Informal Information Group in its strategy paper on Information Management and endorsed the establishment of a Working Group on Information Management with a mandate to develop - on its behalf - strategies and activities to further capacity building in information management.

To follow up on the work of the Informal Information Group and to act upon the endorsement of the Collaborative Council for the establishment of a Working Group on Information Management, 26 participants from 13 countries, including Burkina Faso, Indonesia, Jordan,

Kenya, Nepal, Peru, Philippines, Sri Lanka, Tanzania and Thailand attended a workshop on information management at IRC in The Hague from November 11 - 13, 1991. The workshop discussed and agreed upon strategies, priorities and actions that should be undertaken in capacity building in information management during the next two years. The group's aim is to help further capacity building in information management, especially at country level. To do so, the participants have identified a range of activities that need to be initiated, respectively further developed or adapted to present needs.

Among the activities which were agreed upon during the workshop on information management, and for which coordinating institutes are to take action in the next few months are:

- promotion of information management issues including materials development;
- a newsletter on information management, including a section on technical information issues;
- development of a participatory information needs assessment module;
- an occasional paper on developing a (national) directory of information sources;
- an information and training module on effective marketing of information products;
- a proposal for a joint WSS CD-ROM;
- an inventory of training opportunities in information management;
- development of a training course curriculum on information management;
- update of the Interwater Thesaurus;
- review of the Interwater classification scheme.

The agencies involved in coordinating these activities under the aegis of the Water Supply and Sanitation Collaborative Council are: ENSIC, CEHA, AWWA, CEPIS, WASH, AIT, WHO and IRC.

The Working Group on Information Management will hold its first meeting from April 6 - 8, 1992 at the Asian Institute of Technology in Bangkok, Thailand.

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UGANDA MOBILIZES RESOURCES FOR INFORMATION MANAGEMENT

"What the Water Development Department has achieved over the last year has proved that the setting up of an information system can be initiated in-house when management is committed to mobilizing its own resources and is ready to convince its partners in sector development, including the External Support Agencies, that it is imperative to contribute to this matter of great common concern." Eng. B.K. Kabanda, Commissioner of the Water Development Department (WDD) of the Ministry of Water, Energy, Minerals and Environmental Protection of the Government of Uganda is an enthusiastic promoter of the value of effective information management within his organization, for the water sector as a whole and for his country.

Access to reliable information is particularly important to manage the country's water resources for water supply development and to cooperate with neighbouring countries on shared water resources in the Nile Basin. The Government of Uganda has placed water among the five high priority areas and is making an effort to mobilize resources to develop and strengthen the sector. Efforts are largely directed towards increasing the service coverage of the rural population, which forms nearly 90% of the Ugandan population of 17 million. Only about 20% of the rural population has access to potable water, and yet its labour force forms the backbone of the economy.

"The government realizes the importance of the provision of adequate water supply and sanitation facilities as a key contribution to improved health, and in turn to an improvement of economic strength of individual families and the country as a whole", Mr. Kabanda said in Oslo where he presented the Uganda case at the Water Supply and Sanitation Collaborative Council Global Forum in September.

The proper management of information was first identified as a critical area for performance of the water sector in Uganda in 1988. It was realized then that information had to be collected, analyzed, stored and disseminated to encourage development in water supply and sanitation. In December 1989 the WDD, through the African Medical Research Fund (Kenya), AMREF, contacted IRC for assistance. IRC fielded a consultant in early 1990 to make an assessment of the situation.

The conclusion was that the information needed to manage the water resource, the investment in the construction of water supply and sanitation facilities, the technical

information required for planning, design and implementation of projects, and the administrative resources of the institution, was not adequately available. Eng. Kabanda: "The lack of proper information is a limiting factor in improving the performance of the WDD in terms of qualitative and quantitative output. To support the development of the sector a strong and well-informed institution is required. Thus, the WDD has taken on the challenge to emphasize capacity building in information management."

In order to learn from past experiences, evaluate existing data, meet the demands of the future and then take the appropriate decisions, the WDD needs to compile key-categories of information. "Presently, the vision is blurred, but it will be cleared with availability of information in the right format", Mr. Kabanda said.

The mission resulted in a set of proposals specifically addressing the problem areas. Since then actions have been taken that have been conducive to establishing elements of the information management system. Among the actions realized so far are:

- The rehabilitated and extended WDD headquarters building has a new documentation unit, and additional office space for setting up a proposed Information Management Unit (with DANIDA assistance).
- Donations of books have been received from AMREF and the British Council. WDD is undertaking efforts to secure the supply of foreign technical information materials for a minimum period of three years. AMREF has agreed to provide wooden furniture for the documentation unit, and will provide the services of a national consultant to guide the process of establishing the WDD library and documentation service.
- External support may be available to provide training for the staff of the Information Management Unit and the Library. WDD is to take steps to create a post for a professional information scientist or librarian and to recruit a suitably qualified person for this post.
- Verification and conservation of water resources management data collected in the field has been initiated at 20 field stations under a World Bank/UNDP project. Access to hydrological and geo-hydrological software has also been secured.

The resources of the Ugandan government are limited and can only meet the day-to-day running cost of an Information Management Unit. WDD intends to propose a line item on the normal government budget specifically for the running of this unit. To really bring about a capacity in information management Uganda is also requesting an external professional and financial support.

ASIA REGIONAL MEETING OF INFORMATION NETWORKS ON WATER, SANITATION AND ENVIRONMENT

Over the last three years the Environmental Sanitation Information Centre based at the Asian Institute of Technology (AIT/ENSIC), supported by a technical assistance grant from the Asian Development Bank, has assisted capacity building for information management in water supply, sanitation and environment (WSSE) in China, Indonesia, Nepal, Pakistan, the Philippines, and Vietnam. This activity is known as ENSICNET. Some time ago IRC was requested by ENSIC to execute an evaluation of the network.

One of the conclusions was that there are many WSSE-oriented networks operating in Asia. To enhance communication among these networks and to explore the potential of collaboration AIT/ENSIC proposes to bring together network coordinators and representative donor organizations active in supporting WSSE networks. The objectives of the meeting of WSSE networks are to:

- increase effective dissemination and utilization of information on water, sanitation and environment within the Asian region;
- inventory the information management development efforts of the various regional and national networks;
- establish a mechanism to increase collaboration and exchange of information on network activities.

AIT/ENSIC will convene the meeting in the second week of April 1992 at AIT in Bangkok.

WASIN STAFF AT INFORMATION MANAGEMENT COURSE AT IRC

From 4-22 November 1991 three staff members from the Water and Sanitation Information Network - Indonesia (WASIN) followed a tailor-made course on information management at IRC. WASIN is a national information network in water supply and sanitation comprising five library and documentation units in the Directorate-General of Human Settlements (Cipta Karya), Ministry of Public Works and three in the Directorate-General of Communicable Diseases Control and Environmental Health of the Ministry of Health.

WASIN receives support from the International Development Research Centre, IDRC of Canada. The financing by IDRC will run out by the end of 1992. By then the WASIN project should have established itself as a worthwhile activity with a reasonable prospect of being

able to sustain its activities in the organizational environment in which it is functioning. Suggestions to guide that process have been made by Stephen Parker, IRC Information Management Consultant, in a recent draft report to WASIN and IDRC.

Nearly all of the 33 (part-time) staff involved in WASIN have received some training since 1987, mainly concerning technical aspects of information work, and particularly in automation. In order to develop successfully, WASIN will initially need to employ at least one full-time staff member with full professional qualifications and experience in library or information sciences at the degree or post-graduate level. In view of the difficulty of creating new positions in public service in Indonesia, this person may need to be recruited from among existing staff and be given the opportunity to obtain professional qualifications, the report concludes.

The three-week tailor-made course at IRC was a first step in this direction. Cipta Karya, at the suggestion of IDRC, contacted IRC to organize this course for three WASIN staff members. The aim of the course was to introduce the participants to various information services which could be provided within WASIN. The first week concentrated on information policy, information services (question-and-answer services, current awareness bulletins, literature reports), databases, CD-ROM, public relations and promotion of information services. Several short workshops included: interview techniques, formulation of search strategies, and definition of target groups. The participants did an exercise on segmentation of target groups, products and product development. They also applied this knowledge to the WASIN mailing list.

The second week was mostly taken up by participation in international meetings on information management reported elsewhere in this newsletter. The participants spent the final week on a work assignment formulated by the WASIN project manager Mr. Andria Suhandjaja in support of the Indonesia government's shifting role from that of provider of services to that of promoter. They produced digest reports which would help policy makers, middle management and extension workers respectively, carry out the new government policy.

Copies of a report on this training activity and its outcome are available from IRC.

THIRD UNESCO/IHP INTERNATIONAL SEMINAR

The third UNESCO/IHP international seminar on the management of information related to water and the environment, organized by the International Hydraulic Programme of UNESCO from 14-15 November 1991 in Brussels, Belgium, brought together more than 60 participants for an exchange of views on information management, with a special focus on sustainable development in developing countries.

About half of the participants came from developing countries. The group comprised representatives of developing countries - many from institutions specializing in information management for water supply and sanitation and related sectors.

Most of the participants have been involved in the use of UNESCO's well-known software CDS/ISIS. At the meeting it became clear that CDS/ISIS is an excellent software package for thousands of users all over the world, but especially in the developing countries. A lot of new developments were reported on this database management software, such as additional modules and applications. In a number of countries and regions user group associations are active.

The participants at this meeting endorsed a range of recommendations, of which the most important are:

- UNESCO is requested to strengthen the support for further development of CDS/ISIS for users in water, environment and other subject fields.
- In view of the many important local developments in CDS/ISIS which take place around the world, UNESCO is invited to:
 - (a) organize an international CDS/ISIS user meeting on application in water and environment;
 - (b) strengthen information exchange and communication among the CDS/ISIS user community in this field.
- Serious efforts should be undertaken to develop joint databases on water resources management, water supply and sanitation relevant to developing country needs, and explore opportunities to have these databases reproduced on CD-ROM.

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COMMUNICATION STRATEGY AND CASE STUDIES

In September 1991 the Water Supply and Sanitation Collaborative Council established a Working Group on IEC - Information, Education and Communication. This working group is working on an outline strategy for increased and more effective communication in and for the sector. Six to eight case studies are being produced which describe successful integration of communication in programmes for change. A first meeting of this group is planned alongside the International Conference on Water and Environment in Dublin, at the end of January.

Based on the broader goals of the sector the objectives of the communication strategy are:

- Increase **awareness and recognition among key decision makers -- at local, national and global levels** -- of the importance of WSS to the economic, social and physical health of communities.
- Through **efficient use of resources, maintain or increase resource allocation for WSS from all sources --** community level, national and global.
- Heighten **participation and cooperation of all partners.**

To support these efforts a draft Resource Booklet for Communication in Water Supply and Sanitation has been produced. It aims to assist all those who plan or implement communication efforts in and for water supply and sanitation programmes in their countries. The booklet provides an approach to communication, and a set of basic elements for messages to priority target groups: users, sector staff, and policy and decision makers. The 48 page booklet can be ordered from IRC.

The compilation of two-page case studies is available under the working title "Communication Case Studies for the Water Supply and Sanitation Sector". On behalf of the Working Group we invite readers to contribute new case studies from the field in which focused communication has played a key role.

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ICWE CALLS FOR NEW APPROACHES TO SOLVE WATER CRISIS

"Water is a fundamental natural resource, and water problems figure importantly in all national environment programmes. The topic of water does not perhaps have as high a profile in current environmental work, or in environmental journalism, as the more novel issues of climate change, ozone layer depletion and air pollution generally. The reality is that mundane problems of water availability and water quality are among the greatest challenges affecting mankind."

At the opening press conference of the International Conference on Water and Environment, held from 26 -31 January in Dublin, Dr. Rory O'Hanlon, Ireland's Minister for the Environment, tried to sell the water issue to a score of media representatives.

At the end of the week-long conference in Dublin 500 government-designated experts and representatives from non-governmental and inter-governmental organizations from 113 countries called for new measures to help solve the emerging crisis in global fresh water resources. This can only be brought about through political commitment and involvement from the highest levels of government to the smallest communities. Commitment will need to be backed by substantial and immediate investments, public awareness campaigns, legislative and institutional changes, and capacity building programmes.

The message from Dublin to the world leaders at the forthcoming UNCED "Earth Summit" in June is loud and clear: the human dimension of freshwater resources is so important that all governments should translate the recommended activities into urgent action programmes for water and sustainable development.

The Conference adopted a four-page "Dublin Statement" which is based on four guiding principles, calling for "concerted action to reverse the present trends of overconsumption, pollution and rising threats from droughts and floods". Significantly, three out of the four principles set down by the predominantly scientific and technical participants focus on the human dimensions:

1. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
2. Water development and management should be based on a participatory approach involving users, planners and policy makers at all levels.
3. Women play a central part in the provision, management and safeguarding of water.
4. Water has an economic value in all its competing uses, and should be recognized as an economic good.

A series of recommendations have been put forward to enable countries to tackle their water resources problems on a wide range of fronts according to the Dublin "Action Agenda". Among the major benefits to come from action on the Dublin recommendations will be:

- Alleviation of poverty and disease
- Protection against natural disasters
- Water conservation and reuse
- Sustainable urban development
- Agricultural production
- Protection of aquatic eco-systems and
- Resolution of water conflicts.

The Conference also stressed that implementation of action programmes for water and sustainable development will require a substantial investment, not only in capital projects but also in building the capacity of people and institutions to plan and implement those projects.

ICWE participants recommended periodic assessment of progress towards achieving the goals of water programmes. In the framework of the follow-up procedures developed by UNCED for Agenda 21 all governments should initiate this periodic assessment. To facilitate the participation and the co-operation of all interested governments, the various UN institutions working on water issues, regional and non-governmental organizations and the private sector, the ICWE proposes a major new initiative - a World Water Council to which all such groups could belong. UNCED is requested to consider the financial requirements for water-related programmes in the funding for implementation of Agenda 21.



For copies of the statement contact:

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SUPPORTING COMMUNITY MANAGEMENT - SOME LESSONS FROM LATIN AMERICA

The idea of community management has emerged as an important theme since the Water Decade has drawn to a close. The prominence given to this issue in the New Delhi Statement indicates that it will become an even more central concern within the sector in the 1990s.

Community management is seen by many as a key to sustainability, and as a significant step forward from earlier ideas of participation to more genuine forms of community responsibility and control. In a resource-scarce environment, it is also seen as a vehicle for the achievement of the post-Decade goal of "some for all, rather than more for some".

In the past the agency view of the community's role has been primarily focused on solving technical problems of installation and maintenance, often overlooking the traditional capacity already manifested within communities to manage resources. Preliminary studies into the roles which communities can and do play in the management of water supply systems have already begun at the IRC International Water and Sanitation Centre, The Hague. Although far from complete, these studies have already pointed to some early lessons.

In most Latin American countries responsibilities concerning water projects and water systems at village level are taken by community-based "Juntas Administradoras". During construction work the task of the juntas is typically centred on organizing non-skilled community labour, and community contributions of materials, cash, etc.

When systems are completed, the juntas do not manage the water systems in a total sense; common responsibilities concentrate only on the technical aspects of operation and maintenance. Broader management problems of decision-making, solving and dealing with disputes, and so on, are rarely attended to. Training activities are also very scarce.

The initiative, collaboration and commitment displayed in the initial phases of the project contrast with the lack of management which is characteristic after the water systems have been handed over. Fortunately there are many

successful cases coming from projects which are making the best use of community potential. As managers, conscious users are responsible for their own water systems. These cases show that if a full management role is to be adopted, the development of more broadly based skills and problem solving approaches will be needed, as well as sensibility as far as participatory and learning processes is concerned.

A visit to a UNEPAR-KfW (Unidad Ejecutora del Programa de Acueductos Rurales-Kreditanstalt für Wiederaufbau) supported water supply and sanitation project in Guatemala provided an interesting illustration of the benefits which can be obtained from a more learning-oriented approach. In 65 communities in the western region of Guatemala, the local authority is collaborating with communities to install piped water supply and sanitation systems, with the community being responsible for administration and maintenance after construction is completed.

During visits made to the project area, it became clear that while community members were genuinely interested in the implementation of water supply and sanitation facilities, and the committee members earnestly work to get cooperation from the community, the goal of full community involvement and commitment has yet to be achieved.

A thorough review on the working methods used by UNEPAR promoters showed that community visits are not sufficiently effective and are mainly confined to informing community members of their legal obligations. In addition, an existing three-day training course for water committees seemed inadequate to develop the necessary skills and knowledge for effective water management.

Against this background, the promoters together with an IRC consultant implemented a workshop to review the respective roles within the programme of promoters and community water committees. The opportunity was taken to use, develop and experiment with more participatory techniques, of the type promoted with such good effect elsewhere by, for example, the UNDP/PROWESS programme and others. Demonstrations at the community level, where promoters played a facilitator role for the first time, clearly revealed great potential within the community for the solving of its own problems. In addition, the important contribution which could be made by community women in the working groups, and the advantages of being a "facilitator" rather than "community problem solver", were seen. A single experiment of this kind can not, of course, provide solutions in itself, but may point the way to the development of more collaborative and partnership-based approaches in the future.

Enhancing local managerial capacity depends not only on the availability of training and other support activities. Agencies need to develop formats rather than structured or unstructured training courses, and the everyday working experience of communities should be the ground for learning. Providing learning tools may prove to be a far more productive approach than simple instruction in technical tasks. By learning from experience, community members may improve their capacity at their own pace and in their own settings, and develop the skills to organize learning activities of their own, making maximum use of their own resources.

The move to community management is a move from training to learning, from leading to facilitating, and from agency domination to collaboration in a partnership approach. If the guiding principles of the New Delhi Statement are taken up, the 1990s may prove to be the decade of community management and, as a result, a decade of fundamental rethinking of the roles of both agencies and communities in water supply and sanitation development.

HYGIENE EDUCATION IN MALI

Mali is one of several countries where a growing realization of the importance of hygiene education is translated into interesting activities in which IRC plays a supportive role. In March 1991 IRC carried out a mid-term evaluation of the water supply and sanitation programme run by UNICEF-Mali, the National Directorate for Water and Energy (DNHE) and the Division of Hygiene and Sanitation (DHA) of the Ministry of Health.

As a result of the evaluation, it was recommended that a hygiene education and sanitation component be integrated into the programme. In order to create a starting point for the necessary strategy development, eight villages in the Segou and Mopti regions were chosen in which a pilot programme would be carried out. A KAP (Knowledge, Attitude and Practices) study in these villages provided a view on practices and circumstances influencing the occurrence of water and sanitation-related diseases, which served as a basis for determining an approach towards strategy development.

In June, armed with the results of the KAP study, three DHA representatives working in the programme followed a briefing programme at IRC to further discuss and plan strategy development. It was then decided to organize a national and a regional level workshop to follow this up. Upon their return to Mali, a working group consisting of representatives of DNHE, DHA and UNICEF-Mali organized the national workshop in Mali's capital Bamako

in November, in which nearly 30 people participated. They analyzed transmission routes of the water and sanitation-related diseases occurring in the pilot areas and the ways to interrupt these routes. This allowed the participants to determine the focus of hygiene education activities which would result in lower prevalence of these diseases. Ample consideration was given to conditions necessary on the institutional and organizational level to make effective hygiene education possible. Given the importance of monitoring for finding out whether activities carried out have been effective, indicators were developed. Through the presence of staff from other projects having a hygiene education component, experiences gained elsewhere could be used.

The national level workshop was immediately followed by a regional workshop in Mopti. The aim was to operationalize the strategy and to discuss a methodology for village-level planning of hygiene education. Questions discussed included: What is community participation and how do we stimulate this? How can a village level hygiene education programme corresponding to local needs be developed? The methodology will be tried out during the current pilot phase. When and by whom the pilot phase will be reviewed and adapted where necessary was also discussed. If proven successful, the methodology will be applied in additional villages.

The majority of the participants at the Mopti workshop were extension workers. Not only because they are the ones who carry out the hygiene education activities, but also because they have extensive field experience to build on. A new approach at field level needs to be supported by regional or even national level, therefore regional and national level staff also participated in this workshop. As a result of the workshop a field manual for the extension workers is being prepared, and the workshop report, which includes the many workshop hand-outs, will serve as a manual for future trainers of extension staff.

STOCKHOLM WATER SYMPOSIUM - A HOLISTIC APPROACH TO WATER QUALITY MANAGEMENT

The second annual Stockholm Water Symposium will take place from 10-14 August in Stockholm, Sweden. The symposium is a future-oriented series of annual symposia which aim at increased water awareness, and at identifying and analyzing the main water problems and their origin, the threats involved and the principal solutions needed.

The 1992 symposium will address the rethinking needed for the "Turnabout Decade" in the water quality management sector. The starting point will be the

conclusion reached in last year's symposium: that getting rid of pollution is fundamentally wrong. This is made clear by the very immutability of the water cycle and by the fact that water is a unique chemically active solvent in continuous movement. Pollution problems can only be coped with if land and water are managed in an integrated way and the cycles of crucial nutrients and non-degradable substances involved are closed.

The urban, industry and agriculture sectors in developing and industrialized countries will each be approached separately, and solutions needed for managing the main problems will be analyzed and concrete measures suggested. The need for structural changes from a global overall perspective will be addressed, focusing on problems in temperate, tropical and sub-tropical zone countries.

A technical exhibition will be held in conjunction with the symposium.

Delegates from developing countries can apply for financial assistance to Stockholm Vatten AB, Box 70325, S-107 23 Stockholm, Sweden.

Additional information about the symposium and the technical exhibition can be obtained from:

Stockholm Water Symposium 1992
c/o Stockholm Convention Bureau
PO Box 6911
S-102 39 Stockholm, Sweden
Phone: +46 (8) 23 09 90 Fax: +46 (8) 34 84 41

THREE NEW IRC PUBLICATIONS

"On-Site Sanitation: Building on Local Practice", by Madeleen Wegelin-Schuringa. (OP 16, 74p, Dfl. 20/US\$ 11)

The newest publication in IRC's Occasional Paper Series is "On-Site Sanitation: Building on Local Practice", which discusses key elements of a community-based approach to sanitation improvements. The book includes descriptions of methods to involve people from the start in identifying the risks and problems of sanitation conditions in their community as a basis for sanitation improvements. Cultural and social conditions which influence attitudes towards sanitation, methods to upgrade existing sanitation facilities, and different low-cost sanitation techniques are also dealt with. The manual is intended for those involved in sanitation programmes for low-income urban communities in developing countries - not only sanitary engineers, but also social scientists, economists, planners and hygiene educators.

"List of Basic Publications on Water Supply and Sanitation: A selected bibliography", (RS 6, 86p, free of charge)

To keep pace with new developments and directions in the sector, IRC has published an updated list of recommended basic publications to serve sector professionals. The new list comprises 130 references to documents and is designed to assist professional staff - generalists, programme level staff, and project level staff working in water supply and sanitation - to retrieve information relevant to their needs. For each of these user categories, documents are grouped according to eight subject categories ranging from policy planning, health and finance to water supply technologies and environmental engineering concerns. An annotated bibliography, addresses of publishers and information exchange centres, and a list of journals and newsletters is also included.

"Inventory of Selected Training Materials in Water Supply and Sanitation", (RS 7, 158p, Dfl. 20/US\$ 11)

This inventory aims to bring together a selection of the best materials presently available for training in water supply and related fields in English, French and Spanish. The materials listed will be of use to project managers, planners, decision-makers, developers of training material and trainers of water and sanitation workers in developing countries. Materials have been selected on the basis of their potential to contribute to building up the knowledge and skills needed by an individual to perform his or her job. The materials contain clear training objectives, and guidance is provided for use by trainers and by trainees, showing in detail the subject to be taught, the standards to be achieved, the methods of instruction, the training equipment to be used, the form of records to be kept, and the tests to be administered. This annotated and comprehensive list of materials will provide guidance to those who are developing their own training materials as well as to those who are in need of off-the-shelf modular courses.

All of the above publications are available from IRC.

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UNICEF CALLS FOR AN AFRICAN INITIATIVE

African countries that are prepared to actively pursue a plan for safe water supplies for all who are unserved today, at a per capita cost of US\$ 30 or less, should get at least half of the cost via external assistance. UNICEF has agreed to work with other international agencies to mobilize half of the capital costs required, provided that governments and beneficiary communities provide the balance, and develop financing and community participation plans to ensure ongoing management and maintenance of their safe water resources.

This message from UNICEF's Executive Director James Grant was delivered to the Conference of African Water Ministers, which took place from 3 - 5 February in Ouagadougou, Burkina Faso. Such a plan could be incorporated in the National Programmes of Action to implement the goals of the World Summit for Children, currently being developed by most countries around the world. "If you see the value in such an African initiative, you might wish to establish - with the support of the UN system - a task force to develop a more detailed proposal that could be taken up by the International Donors' Conference for African Children called by the Organization of African Unity (OAU) for later this year", the ministers were told.

In an overview of the lessons learned in the 1980s the UNICEF representative warned that the fragmentation of the water and sanitation sector has proven to be a major handicap for development, which must be overcome in the 1990s. Currently, water and sanitation projects are often implemented by different actors working in isolation from one another, resulting in duplication and waste of scarce resources. Governments, international agencies and donors should give high priority to coordinating the presently dispersed activities within the sector.

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Another important lesson is the need to use appropriate, low-cost technologies, which must be greatly expanded if we are to meet the goal of universal access by the end of this decade, as the World Summit for Children Declaration set out to achieve. Some may be reluctant to accept handpumps and latrines as a solution, and yet without such transitional technologies the poor have little hope for advancement. "Until such time as the gap between rich and poor has narrowed, no nation can afford to deny some basic level of services while, in the longer term, aiming for the best that modern technology can provide", Mr. Grant said.

Promoting participation of households and communities, - and especially women - in planning, implementing, financing and maintaining water and sanitation projects is essential to improve the well-being of the majority through the provision of water and sanitation services.

With a new spirit of progressive political and economic reform emerging in Africa first reactions on the UNICEF initiative were positive. France showed keen interest to assist countries in the region with restructuring their sector approach, and various ministers showed an interest to develop a plan along the lines proposed by UNICEF in time for the OAU summit in October.

INTERNATIONAL WATER TRIBUNAL DRAWS ATTENTION TO WATER MISMANAGEMENT

As an instrument to raise public concern and to have open, equitable discussions, the Second International Water Tribunal, which took place in Amsterdam from 17 - 21 February, hopes to have world-wide impact. The week-long tribunal was not a court in the legal sense, but rather a forum for judging water mismanagement activities in the light of both legal and moral considerations. After public hearings of 12 cases prepared by NGOs from all over the world (mainly from Latin America, Africa and Asia), an international jury analyzed the arguments of both plaintiffs and defendants. In 10 cases the judges reached a verdict in which the defendants were found guilty and were asked to take corrective action.

Cases concentrated on water pollution from mining and tanneries, banana production, damage through dams, and denial of clean water. In most cases the jury called for restitution and/or equitable compensation of those who



suffered negative effects from the actions of companies and industries. Another recurrent theme in the verdicts was the recommendation for independent environmental impact studies.

In Europe, Canada and the United States television, radio, newspapers and trade press provided the IWT with the only weapon it has so far: publicity about the cases. Publicity prior to the IWT contributed to reactions from defendants, mostly accused companies. The Compania Mineria El Indio from Chile already proposed drastic measures to increase the water quality in the area they work in. Hydro Quebec, which builds dams in Canada and China, brought a team of specialists to Amsterdam to defend its case. Thor Chemical of South Africa, accused of contamination of water resources around a mercury plant, submitted a written defense. The Israeli Government, accused of the denial of clean water to unrecognized Arab villages in Israel, had a team of lawyers represent its case.

During the seminar PetroEcuador appeared unexpectedly to defend its case, on the urgent suggestion of the president of Ecuador. The jury included Chile's Ambassador in Kenya and Representative to UNEP Mr. Vincent Sanchez; Mr. Alexandre Ch. Kiss, President of the European Council for Environmental Law; Mr. Gerd Winter, Director of the Centre for European Legal Studies; Mr. Mochtar Lubis, Director General of the Press Foundation of Africa; New Zealand writer Kevin Hume and Mrs. Marie-Louise Savané, Special Advisor to the High Commission for Refugees of the UN.

The organizers hope that the results of the public discussion and the recommendations of the jury will contribute to a thorough analysis of the causes and consequences of water mismanagement and the improvements in national legislation and international treaties that are needed. Mr. Sanchez will officially report the jury verdicts to the UNCED in June in Brazil.

At the end of the tribunal the organizers announced that IWT accepted the invitations of three defendants to visit the companies and see how the problems are being solved. IWT contributed to improved contacts between environmental NGOs around the world. For the first time, in a few cases a dialogue has developed between plaintiffs and defendants.

A Declaration of the Second International Water Tribunal prepared by a group of lawyers formulates a set of rights and duties which should protect the interest of those dependent upon water resources. The cornerstone of the "Declaration of Amsterdam" is that all members of present and future generations have the fundamental right to a sustainable livelihood including the availability of water of sufficient quantity and quality.

Other articles include: the fundamental right of each individual, group and entity to have its interests in a water

resource duly taken into account, and the duty of all those involved in a water resource activity to uphold these rights.

All cases, including 10 other ones presented for which the jury had no time, will be available in four books. Further information about cases and the Declaration of Amsterdam are available from:

International Water Tribunal
Damrak 83, 1012 LN Amsterdam, The Netherlands
Fax (31) 20 - 6228384

PARTICIPATORY TRAINING IN PAKISTAN

Based on the performance of projects in the water sector in terms of use and sustainability, it is evident that there is a strong need for participatory training in Pakistan. Almost 60 % of the Government's Annual Development Plan for the water sector is allocated to the operation and maintenance of existing water supply schemes.

International experience has shown that the operation and maintenance tasks can be effectively taken over by the community, thus freeing resources for the development of new schemes. Participatory training methods like SARAR (Self esteem, Associative Strengths, Resourcefulness, Action planning, Responsibility) can help to overcome this constraint, by involving communities at different stages of project development and implementation. Since 1983, Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWWESS) a UNDP interregional project, has been involved in developing replicable models for involving community women in sustainable water supply and sanitation projects.

Two PROWWESS workshops were held in Pakistan, a workshop for local trainers and a Master Trainers workshop, to launch PROWWESS activities in the area. The local workshop involved participants from government agencies, international organizations and NGOs, who have been involved in the water sector. Participants came from diverse backgrounds, and included field level community workers to sub-divisional engineers from the Public Health and Engineering Departments. Experiences from all over the country were brought together in the ten-day training exercise that was held in the scenic Swat valley. Many recommendations for the future role of PROWWESS in the area were discussed: it was felt that a materials reference centre needs to be established in order to facilitate future training workshops. Also follow-up PROWWESS workshops need to be planned in order to disseminate the methodology and to upgrade the existing skills of local trainers. Individual follow-up plans were discussed and participants were generally of the view that participatory training methods were essential for the sustainability of water supply schemes. In the future, PROWWESS will be active in helping to develop a national PROWWESS strategy for the country and initiating an International

Training Network Centre with a PROWWESS component.

The local workshop was followed by a Master Trainer's workshop in Islamabad, which involved a synthesis of experiences gained in using the SARAR methodology in various regions of the world. The workshop was attended by participants from sixteen different countries and four different regions. The Master Trainers' workshop was essential for evaluating the SARAR experience, suggesting modifications for a wider application of the methodology, and appraising the complementarity of SARAR with other training methods. Individual tools and training exercises were discussed and the role of the SARAR facilitator was clarified. This workshop was also important in assisting the PROWWESS trainers in targeting and planning training exercises for various actors in the water sector, that is, from policy makers to field level workers. Many practical suggestions resulted from this workshop, which will enhance the role of PROWWESS in the future, among which: a Master Trainers' Newsletter for closer collaboration between regions and an exchange of experiences, and a trainers' directory in order to facilitate networking. Based on the successful experience of this workshop, it was felt that such workshops need to be held periodically in order to continue the PROWWESS dialogue.

"A GROUNDWATER PRIMER" - ENLARGED EDITION

The issue of water resources is becoming increasingly important in the 1990s. The simplest choice of water is between surface water and groundwater. As a drinking water source groundwater has one big advantage: it often does not require any treatment. On the other hand, in many places groundwater must be raised by pumping, which adds to the costs. Yet in many situations it is preferable to accept the pumping costs involved in lifting groundwater, rather than installing the treatment plants for surface water supply.

Groundwater is a renewable resource which has to be managed with care. To be able to do this, knowledge about occurrence and the movement of groundwater is a prerequisite. In 1982 IRC published the book "A Groundwater Primer" as a source book on this subject. To date more than 1,400 copies have been used in various training courses and programmes in Europe and a number of developing countries.

Facing the need for a new print-run, IRC and the authors G. J. Hcij and C.R. Mcinardi decided to expand the document with a new chapter on groundwater in hardrock. Other subjects treated in this book include: the place of groundwater in the hydrological cycle; properties of ground and water; the basic theory of groundwater flow; quality aspects of groundwater, including fresh/brackish water relations; various field and laboratory surveys and the development of groundwater.

Published in a new, more attractive lay-out the primer should be of help to planners and managers who are not specialists in this particular field, but are involved in the use and the development of groundwater resources. The expanded edition is of particular value in training courses.

"A Groundwater Primer" is available at Dfl 35.00 or US\$ 20.00 from IRC.

ROUGHING FILTRATION IN WATER TREATMENT

(International Workshop in Zurich, June 25 - 27, 1992)

The International Reference Centre for Waste Disposal (IRCWD/EAWAG) is organizing an international workshop on roughing filtration in water treatment.

Roughing filters are used primarily for solids separation and can, to a certain extent, also achieve a microbiological and chemical improvement of the water quality. In Europe they are used as gravel filters in combination with slow sand filters, particularly in artificial groundwater recharge plants.

In the last few years, roughing filtration was tested in various developing countries. New filter designs capable of treating even highly turbid surface water in combination with slow sand filters have been developed and successfully applied in these countries. This new technology of intake filters and horizontal or vertical-flow roughing filters will be presented by experts from Colombia, Peru, Ghana, Tanzania and China.

The workshop will be held in German and English with simultaneous interpretation in either language. For further information about the workshop, please contact: Conference Secretariat "Roughing Filtration", c/o Water Supply Zurich, P.O. Box, CH-8023, Switzerland (Fax 41.1.435 25 57; Telex +822 060 wvz ch)

CHECKLIST FOR THE PLANNING AND EVALUATION OF DWSS PROJECTS

The Swiss Development Corporation (SDC) commissioned a cross analysis of evaluations of Swiss-supported water supply and sanitation projects in five developing countries (Bangladesh, Lesotho, Mozambique, Nepal and Nicaragua). In November 1989 SDC published this cross analysis in German. As this overview aims to contribute to a better formulated strategy for sector programmes, SDC translated the cross analysis into English and French, and contracted IRC for their printing and distribution. The 20-page brochure entitled "Water and Sanitation Analysis 1989 - A synthesis" in English and French can be obtained free of charge from IRC.

The checklist printed on page 4, emerging from the analysis, may be useful for those involved in planning and evaluation of projects.

Name of Project:

Country:

Date:

FIELDS	YES	NO
SUSTAINABILITY		
MOTIVATION AND PARTICIPATION		
1. Clean water is highly valued by the villagers		
2. Water in sufficient quantity is available and easily accessible		
3. The organizations required for operation and maintenance O&M are functioning		
4. Experiences outside of the project are not a hindrance to the motivation and participation of the village		
OPERATION AND MAINTENANCE		
5. The installations are simple and cheap to operate		
6. Financing of administration, operation and maintenance is settled		
INSTITUTIONAL ORGANIZATION		
7. The institutional organization is integrated into the existing institutional environment		
8. The institutions's task is clearly defined, its budget is financed locally		
MIDDLE- AND LONG-TERM FINANCING		
9. Expenditure/profits have been studied, data collected		
10. Expenditure for O&M are in a reasonable relation to the local income and labour commitments		
APPLIED TECHNOLOGY		
11. As far as possible the installations are built with local materials		
TRANSFER		
12. Data and modalities of transfer, incl. long-term support have been defined by a contract		
INTERDEPENDENCE		
PROJECT ENVIRONMENT		
13. The productivity of the water resources is maintained		
14. The installations do not pollute the ground-water		
PROJECT - NUTRITION - HYGIENE - HEALTH		
15. Enough facilities are available (including the place of work)		
16. The water remains clean in its way to and within the household		
SOCIAL ASPECTS		
DWSS-PROJECTS AND POWER		
17. All social groups are granted equal opportunities		
18. The project does not lead to a deterioration for anyone		
DWSS-PROJECTS AND WOMEN		
19. Women participate in the planning and preparation		
20. Women's participation and decision-making are encouraged		
EFFICIENCY		
MANAGEMENT		
21. The managerial concept is clear, feasible and flexible		
ORGANIZATIONAL STRUCTURES		
22. No structures are created alongside existing ones		
23. The investment in the project implementation and that in the administration stand in favourable proportions		
PROGRAMME IMPLEMENTATION		
24. A data-based evaluation of efficiency is possible		
25. The potential of existing resources, logistical means and institutions has been analysed and used		

CA-Water, NiPo, Nov. 89

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FRESHWATER ON AGENDA 21

"Protection of the quality and supply of freshwater". This is item 18 on *Agenda 21*, as approved by the fourth meeting of the Preparatory Committee for the United Nations Conference on Environment and Development to be held in Rio de Janeiro in June. The draft *Agenda 21* is the basis for concrete action plans emerging from the conference. In item 18, a range of programme areas relating to freshwater are proposed for action in the 1990s.

They are:

- integrated water resources development and management;
- water resources assessment;
- protection of water resources, water quality and aquatic ecosystems;
- drinking water supply and sanitation;
- water and sustainable urban development;
- water for sustainable food production and rural development;
- impacts of climate change on water resources.

For all of these programme areas the *Agenda 21* contains the basis for action, objectives and activities, as well as the means of implementation (financing, scientific and technological means, human resources development and capacity-building).

Under drinking water supply and sanitation the following activities are listed:

Environment and Health

- Establishment of protected areas for drinking water supply sources;
- Sanitary disposal of excreta and sewage, using appropriate systems to treat waste waters in urban and rural areas;

- Expansion of urban and rural water supply and, in addition to the reticulate water supply system, develop and expand rainwater catchment systems, particularly on small islands;
- Building and expansion, where appropriate, of sewage treatment facilities and drainage systems;
- Treatment and safe reuse of domestic and industrial waste waters in urban and rural areas;
- Control of water-associated diseases.

People and Institutions

- Strengthening the functioning of governments in water resources management and, at the same time, giving full recognition to the role of local authorities;
- Encouraging water development and management based on a participatory approach, involving users, planners and policy makers at all levels;
- Applying the principle that decisions are taken at the lowest appropriate level, with public consultation and involvement of users in the planning and implementation of water projects;
- Human resources development at all levels, including special programmes for women;
- Broad-based education programmes, with particular emphasis on hygiene, local management and risk reduction.

National and Community Management

- Support and assist communities in managing their own systems on a sustainable basis;
- Encouragement of the local population, especially women, youth, indigenous people and local communities in water management;
- Linkages between national water plans and community management of local waters;
- Integration of community management of water in the context of overall planning;
- Promotion of primary health and environmental care at the local level, including training for local communities in appropriate water management techniques and primary health care;
- Assisting service agencies to be more cost-effective and responsive to consumer needs;
- More attention to be given to underserved rural and low-income peri-urban areas;
- Rehabilitation of defective systems, reduction of wastage and safe reuse of water and waste water;



- Programmes for rational water use and ensured operation and maintenance;
- Research and development of appropriate technical solutions.

Awareness Creation and Public Information/Participation

- Strengthening of sector monitoring and information management at subnational and national levels;
- Annual processing, analysis and publishing of monitoring results at national and local levels as a sector management and advocacy/awareness creation tool;
- Use of limited sector indicators at regional and global levels to promote the sector and raise funds;
- Improve sector coordination, planning and implementation, with assistance of improved monitoring and information management, to increase the sector's absorptive capacity, particularly in community-based self-help projects.

Financing of this action programme is to be discussed at the Earth Summit in Rio. The draft *Agenda 21* stated that "Accelerated development is necessary to reach the desired coverage of water supply and basic sanitation services by the year 2000. The rate of investment for the years until 2000 has, at least, to be doubled to a total of \$US 20 billion annually to achieve complete service coverage. The external component should be maintained at no less than one third of this, i.e. at about \$US 6.7 billion annually. The improved operation, maintenance and management of systems and the full utilization of the investments made required the allocation of external support in the order of \$0.7 billion. The total external funding needs until the year 2000 are, therefore, \$US 7.4 billion annually."

Our next issue will be devoted to the outcome of the UN Conference on Environment and Development. We hope to be able to report positively on the outcome of the above action agenda.

COMMUNITY SELF-FINANCING LESSONS FROM INDONESIA

The Community Self-Financing for Water and Sanitation Systems (CSFW) project in Indonesia has as one of its objectives to share important lessons learned with people involved in water supply and sanitation (WS&S) projects and an interest in community management and financing. It concerns a five-year pilot project (1989 - 1993) which the Indonesian Government is jointly implementing with CARE International Indonesia.

The project is designed to test whether rural communities in Indonesia are willing and able to finance WS&S systems, to develop an approach to community management and financing, and to promote this approach outside of the project. As these are key issues for the whole sector we quote here the words of the CSFW Project Coordinator Dan O'Brien. "It is an exciting and innovative water supply and sanitation project," he told us at a recent workshop in Bangkok. He mailed us the following write-up on lessons learned.

"During the implementation of the CSFW project over the past three years, several important lessons have emerged. These include:

1. Site selection is probably the single most important step in CSFW. Not all sites are able to successfully complete CSFW. The primary indicators for selecting a community that will likely finish CSFW is effective leadership and organization capability, successful completion of other community projects, willingness to pay (see #2), ability to pay, and affordable technologies.
2. Willingness to pay has proven to be more important in predicting success than ability to pay. Many CSFW communities who are able to pay have not been able to raise enough cash to pay for their water supply systems while poorer communities, less able to pay, have successfully financed their systems. The primary indicator of willingness to pay seems to be access to a close and adequate supply of water. This is explained in #3.
3. Access and quality. Communities that do not have easy access to water are generally willing to pay for improved water supply, regardless of their ability to pay. Communities will tend to pay for an increase in quantity and convenience, **but generally will not pay for an improvement in quality**.
4. Technical assistance and training are extremely important and must be provided to communities by some "delivery mechanism". Originally, it was assumed that if communities had access to favourable credit, they could finance and build WS&S systems with minimal technical assistance and supervision. This assumption was based on the fact that communities frequently finance and build community schools and mosques. This assumption has proven to be false. Where technical assistance, training, and supervision to CSFW communities have been minimal, quality of construction has suffered. The delivery mechanism for technical assistance and training can be CARE, GOI, other NGOs, or private contractors.

5. Credit from pipe suppliers or vendors has become the preferred and most common method of financing the WS&S systems. Pipes, fittings, and cement are purchased from suppliers at discount rates and repaid anywhere from three to six months later. This type of credit has become more popular than bank loans.
6. High interest rates and collateral are two obstacles CSFW communities face when trying to use credit from banks. Bank loans were initially viewed as the most promising way to provide communities up-front capital to build the WS&S systems. GOI has deregulated the banking system and discontinued targeted loan programmes. Therefore, CSFW communities are forced to borrow at prime interest rates and provide the bank with collateral which discourages the use of bank credit.
7. Resource mobilization planning is a critical step that must be conducted early in the project. This is done by having the community choose the WS&S technologies, designing and costing these systems, then developing a financing plan. This step allows the community to determine how much labour, local materials, and cash is required. Some communities may decide not to participate once they understand the costs involved.
8. Hygiene and sanitation has proven to be the most difficult component to implement. While many CSFW communities are willing to finance and build water supply facilities, few are willing to pay for sanitation. The exception is some communities on Java where toilets are built into public bathing facilities. In these cases, toilets are used and maintained. However, communities are generally less willing to finance and build sanitation facilities than water supply systems."

These experiences from Indonesia will be discussed in an international workshop on community management of water systems in developing countries. In cooperation with UNDP, UNICEF, WHO and the World Bank, IRC will be hosting this workshop from 4-10 November 1992. Intended results of the workshop are a state-of-the-art publication on experiences in community management and the implications of further strengthening this approach, and a plan of activities for enhancing the effectiveness of community management in the 1990s. Case studies on the subject are welcome, and can be mailed to IRC, Attention: Phil Evans.

For more information about the CSFW project please write to: Dan O'Brien, CSFW Project Coordinator
Care International Indonesia
P.O.Box 4123
Jakarta 12041
Indonesia

MANAGEMENT FOR SUSTAINABILITY COURSE TO BE HELD IN CAMEROON

Together with the Pan African Institute for Development IRC will organize the successful course "Management for Sustainability in Water Supply and Sanitation Programmes" from 12 - 30 October 1992 in Buca, Cameroon. This is the first time the course will be offered in Africa to English speaking staff in water supply and sanitation programmes and projects.. In November 1991 the three-week course was organized in Africa for 13 French-speaking participants in Ouagadougou.

The three-week course is divided into three parts and will be held at the PAID office in Buea. The first part will concentrate on management aspects of planning and monitoring with special reference to long-term sustainability. The second part will concentrate on key aspects such as community involvement, cost recovery, maintenance systems development, community-based financing systems and related environment issues. The third part will be used by the participants to develop a plan of action for their projects.

From 4- 22 May this course (developed with the Management for Development Foundation) took place for the sixth time in the Netherlands. Three participants came from Kenya, two participants from Tanzania, and one each from Cameroon, Ethiopia, Malawi, Namibia, Pakistan, Sri Lanka and Zambia. UNICEF, the Swedish Development Agency (SIDA), the Finnish Development Agency (FINNIDA), the German Agency for Technical Cooperation (GTZ), and the Dutch Directorate-General for International Cooperation (DGIS) were among the sponsors. For the first time the Canadian International Development Agency (CIDA) sponsored one of the participants in this course.

With PAID, IRC has an arrangement to offer at least three of these joint courses. The course fee is US\$ 3000 per participant, including accommodation and meals at the PAID-campus. PAID is specialized in training of trainers, applied research, consultancy services and assistance in the field of rural development, with emphasis on self-help initiatives and community participation.

The course is meant for people having several years of experience in water supply and sanitation programmes.

Applicants will be required to secure funding themselves. Submission deadline for the course in Cameroon is end of August 1992. For applications or more information contact: IRC Training Unit, Attention: Izabella Wimmers.

15TH INTERNATIONAL SYMPOSIUM ON WASTEWATER TREATMENT AND 4TH WORKSHOP ON DRINKING WATER

From 17-19 November the Ministry of the Environment in Quebec, together with the Association Québécoise des techniques l'eau and the Société Québécoise d'assainissement des eaux will be sponsoring the 15th International Symposium on Wastewater Treatment and 4th Workshop on Drinking Water. The principle objective of the symposium and workshop is to promote the transfer and exchange of research and technologies related to municipal and industrial wastewater treatment and to the treatment of drinking water. The symposium and workshop are designed to provide a forum for scientists, engineers, technicians, plant operators and students involved in the fields of treatment research, design, operation and management of drinking water and wastewater treatment plants. Some of the principal themes include, in the area of municipal wastewater: plant operation, relationships between design and operating parameters, operator training, and treatment options for small municipalities; for industrial wastewater: waste treatment technology, sludge treatment and disposal, clean technologies and new treatment procedures; and for drinking water: groundwater, micro-pollutants, and taste and odour.

Additional information can be obtained from:

AQTE - Symposium '92
407 boulevard Saint-Laurent Suite 500
Montreal, Quebec H2Y 2Y5
Canada
Fax: (514) 866-4020

NEW PUBLICATIONS

WASH Publishes Technical Notes on Water and Sanitation

The Water and Sanitation for Health (WASH) Project, sponsored by the U.S. Agency for International Development, has inaugurated a series of "Technical Notes" specifically designed to provide succinct information on technical topics for development workers in water and sanitation. They are not intended to be "how-to" manuals, rather they attempt to impart a conceptual understanding of the topic and some of the programmatic issues associated with it. Technical Notes are short (6 to 8 pages), are organized in a user-friendly fashion, and make ample use of illustrations.

Three Technical Notes are available at present: "A Primer on Investigating and Reducing Water Loss in Water

Systems in Developing Countries", "Disinfection for Rural Community Water Supply Systems in Developing Countries", and "A Primer on Comparing and Using Cost Data in Water and Sanitation Reports". These will be followed by a series of Technical Notes devoted to cholera prevention: "Household Water Disinfection" and "Rapid Hygiene Behavioral Assessment" will be the first two. Three or four Technical Notes per year are anticipated.

Technical Notes may be ordered from:

WASH Headquarters:

1611 North Kent Street, Suite 1001

Arlington, Virginia 22209-2111, USA

telephone: (703) 243-8200; fax (703) 243-9004

John E. Gould (1991). Rainwater Catchment Systems for Household Water Supply, Environmental Sanitation

Review no. 32, 57 pp.

Price: US\$ 20 airmail included, US\$12 for requests from developing countries.

The review aims to provide a comprehensive overview of the current state of the art on rainwater catchment systems technology and its implementation for household water supply. It includes consideration of its technical feasibility, appropriate design and construction methods, implementation strategies, water quality and social and economic factors. Using case studies from Asia, Africa and Australia some of the main obstacles and constraints encountered by specific projects are reviewed. Successful strategies and approaches to project planning, implementation and evaluation are examined and specific information regarding the costs, financing mechanisms and water quality aspects of different types of systems are presented. The review concludes with a set of guidelines and a summary of features common to successful projects, which should provide a valuable starting point for project managers, planners, architects, water engineers and development workers when initiating a feasibility study for implementing this technology.

The report is available from:

Environmental Sanitation Information Centre (ENSIC)

Asian Institute of Technology

PO Box 2754

Bangkok 10501

Thailand

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Newsletter 208 June 1992

SIMPLE LIFTING DEVICE MAKES LIGHT WORK OF HANDPUMP MAINTENANCE IN ZIMBABWE

The development of an ingenious lifting device has made community-based maintenance of down-the-hole handpump components a reality in Zimbabwe. The device, known as the **SIWIL** (*SI*mple *W*ork *I*nstrument for *L*ifting), turns the handpump itself into a tool to lift the rising main and pump rods and bring the cylinder up to ground level for repair. The acronym SIWIL not only describes the device itself, but also immortalizes the names of its inventors, *Sibanda Zanamwe* and *Willem van Hardewijk*.

Both work in the Masvingo Province of central Zimbabwe. The former works for the District Development Fund (DDF) as the government's Provincial Water Officer for Masvingo. The latter is a water and sanitation adviser working with the government in Masvingo under the auspices of the Netherlands Organization for Development Cooperation. (SNV)

In an estimated 70% of pump breakdowns in Zimbabwe, the fault is to be found in the cylinder. Before the invention of the SIWIL, the only way to lift the cylinder out was by using a heavy block and tackle, hung from a tripod constructed over the handpump. The block and tackle required is so heavy that it can not be carried by ward-based pump minders, who depend on bicycles for transport. This leads to delays in bringing broken pumps back into service and an over-reliance on the district-based government maintenance team for simple parts replacement, and severely limits the amount of work which can be done without outside assistance by the pump minders and community-based handpump caretakers. The SIWIL is simple and cheap to make, weighs less than eight kilograms, and is small enough to be carried on a bicycle. It completely eliminates the need for cumbersome tripods and heavyweight blocks and tackle for most down-the-hole repairs. The impact of the SIWIL on maintenance costs in Zimbabwe is likely to be highly significant and should

dramatically reduce the expenditures on transport and labour incurred every time the District Maintenance Team is called out.

The SIWIL is tailor-made to fit the Bush Pump, a heavy duty community handpump developed and manufactured in Zimbabwe. A characteristic feature of the Bush Pump is the heavy wooden block which acts as the hinge-point at the top of the pump and to which both the handle and the pump rods are connected (see Fig.1). The SIWIL (Fig.2) is fitted by unbolting the block, fixing the lifting device in its place, and replacing the handle in reverse (Fig.3). The wooden block then acts as a counter-weight and makes it easy to lift out the rising main. A team of two or three people can safely manage the whole job, using the standard set of tools issued to pump minders.

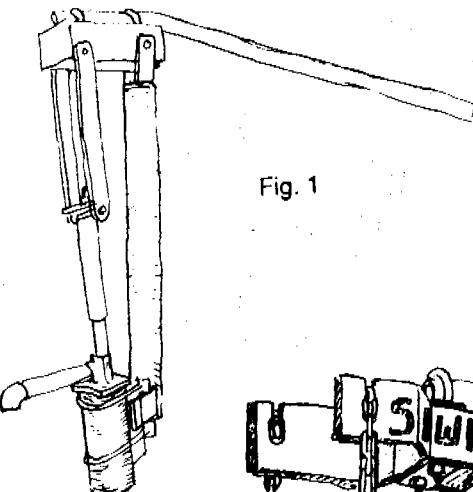


Fig. 1

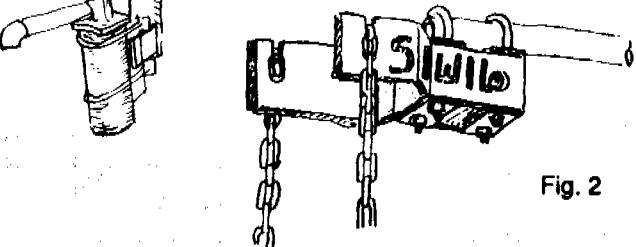


Fig. 2

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Lifting the pipes and rods out of the ground is a slow but steady job and, with practice, takes little more time than using the conventional approach. After removing the pump outlet, lifting is achieved by pulling down the handle, while the rising main is gripped by a pulltite suspended on chains from the SIWIL. After each stroke the rising main is held in place with a pipe vice while the pulltite is allowed to slide

down the pipe by raising the handle, and the sequence begins again. As each three meter length of pipe and the rods inside are exposed, they are disconnected until the whole assembly is eventually brought up to ground level. After repairs, the works are lowered back down the hole by following the same procedure in reverse.

The prototype of the SIWIL was made in the DDF workshop in Masvingo and locally tested. It was so successful that it has now been registered at the patent office in Harare and adopted in all provinces. Although it is not yet in universal use in the country, it is already having an important influence in increasing local self-reliance in handpump maintenance and repair.

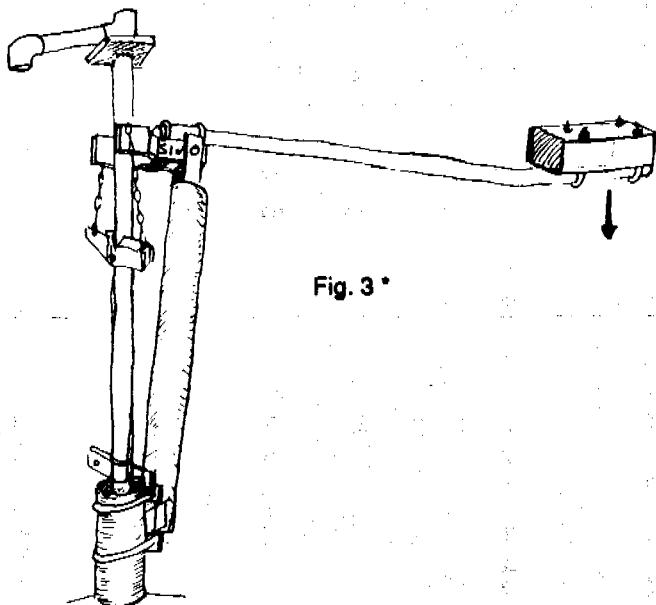


Fig. 3 *

* Illustrations by Sibanda Zanamwe and Willem van Hardewijk.

AFTER RIO: LET US MOVE ON

"In many poor countries inadequate environmental policies still kill people, or make them ill, or leave them hungry. Dirty water, sooty air, the fumes from charcoal cooking-fires, soil erosion and flash floods are all hazards that have long since been tackled in the rich world. Decent sewerage, safe drinking water, simple technology to control smoke and dust, and farming methods that protect soil may not be environmental priorities with much appeal to green lobbyists, but they are the reason why the government of every poor country should be environmentally friendly."

We wholeheartedly agree with this comment in the June 13 issue of the Economist on the outcome of the Earth Summit

in Rio de Janeiro. Or should one say the lack of outcome from the UNCED? In our May issue we discussed the proposed activities for drinking water supply and sanitation from the Freshwater chapter of the Agenda 21. Reports from Rio indicate that Agenda 21 was adopted, but that commitments from delegations for funding these activities remain rather unclear.

The compromise paragraphs on financing in Agenda 21 mention that estimated average total annual costs for 1993-2000 are only 'indicative' and 'order of magnitude' estimates, and have not been reviewed by governments. For drinking water and sanitation activities the Conference Secretariat has estimated these costs to be about \$20 billion including about \$7.4 billion from the international community on grant or concessional terms.

"Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes governments decide upon for implementation."

The now adopted Agenda 21 describes additional means of implementation in science and technology, human resources development and capacity building, which all of us in the sector should move ahead on as soon as possible. We will describe them in detail in the next newsletter.

NGO Fresh Water Treaty

At the NGO Global Forum in Rio an NGO Fresh Water Treaty was elaborated as "a result of a complex discussion process because of existing important differences with regard to visions, interests, fields of action and practices among the participants", as coordinator of the working group and one of the authors of the treaty, Mario Vásconez, writes.

The action plan in the NGO treaty contains a lot of lobby and campaign work on social organization, local information and participation, environmental conservation and restoration, research, and diffusion of technology. The treaty contains commitments ranging from the development of practices to improve the effectiveness and efficiency of operational information systems, to mobilizing society to initiate public civil actions against those who degrade water systems and lobby of governments to guarantee the full functioning of agencies that regulate, monitor and audit environmental conditions.

The most important commitment in the treaty is that NGOs will lobby governments, the private sector and multilateral development agencies to ensure that prospective water

resource investments are democratically debated, publicly implemented, and managed with the participation of representatives of the communities.

World Water Day and Convention Proposed

During UNCED in Rio de Janeiro two new initiatives have been proposed which can be helpful to get water higher on the public as well as the political agenda.

During the discussion on Agenda 21 the conference added to the document that the United Nations should consider a World Water Day.

The French president Mr. François Mitterrand in his speech to the UNCED called upon world leaders "without further delay to get down to drafting a convention on drinking water, which is just as vital as the climate convention and the declaration on the forests. We are surprised this has not already been done," Mitterrand added.

The suggestion for the World Water Day will follow the normal route within the UN system for days or decades proclaimed by the UN. The French Government is currently thinking how best to operationalize President Mitterrand's suggestion for a convention on drinking water.

In view of our work in the Water Supply and Sanitation Collaborative Council's Working Group on Information, Education and Communication we will keep you posted about these interesting initiatives.

QUESTIONNAIRE RESPONSE

In late 1990 a questionnaire was sent to our readers, asking them about their views regarding various aspects of the content, layout and impact of this newsletter, and requesting suggestions for improvements. By now many of you may be wondering as to the results of the questionnaire and the effect of the responses. Approximately 17% of the readers returned the questionnaire over the last year.

Interesting findings included:

- with 62% of respondents sharing the newsletter with 1-10 other persons, the actual number of readers is more than 15,000;
- seven out of ten readers have ordered publications on the basis of announcements in the newsletter;
- 88.3% were very satisfied with the readability and 69.7% with the attractiveness;
- 91% of the respondents always or often read articles on field experiences, while course announcements were read by the fewest numbers of readers (62%)

- 43% of the respondents also received World Water, 29.1% Waterlines and 27.2% Source (which has since ceased publication).

The range of suggested improvements was broad and interesting; a more attractive layout and presentation was the foremost suggestion. Based on this, we have already begun to make some minor changes in layout in anticipation of the more far-reaching changes mentioned above. As you can see we are introducing two-column headings, more white, and where possible, illustrations. Shortly we will also change to more environmentally friendly paper.

With respect to content, we are gradually trying to increase the number of short case studies and field experiences on community-managed projects and programmes. Those topped the list of most useful items in the newsletter, as well as suggested improvements. Most requested issues, in order of decreasing mentions, were appropriate technology issues including cost reduction, environmental issues, health, country and regional news, and urban water supply and sanitation. All of them will get a fair share in our future coverage.

The responses, as well as ensuing discussions with long-standing partners, have resulted in a planned overall restyling of the newsletter. Since September 1990 we have been considering changing the name of the newsletter, and the intention was to introduce the name change and a new mast head together with the changes in layout and presentation of the content.

The discussions about the name change from the IRC Newsletter to a name more accurately reflecting what we are - a sector newsletter - are taking more time than anticipated. With the Water Supply and Sanitation Collaborative Council we are currently discussing the possibility of also using the newsletter as a vehicle for the Council and its key members to inform the sector of recent developments. This decision, and a decision on a suitable name for the 'new' newsletter are likely to be reached by the end of this year.

NEW IRC PUBLICATIONS

Economic Benefits from Improved Rural Water Supply, a review with a focus on women by Evelien Kamminga. Occasional Paper no. 17, 30 pp. US\$ 20.--

The issue of economic benefits is particularly relevant in the context of current debates on making projects more community-based and user-oriented, improving the

position of women, enhancing community management and cost recovery of improved supplies. The paper gives a systematic and analytical review of current data on economic benefits derived from rural water supply projects. The possibilities and implications for better incorporating these benefits in the planning and implementation process are assessed. Finally, some aspects of the methodology of collecting data on the extent and scope of economic benefits, to whom they accrue and under which circumstances, are examined.

The paper is meant for project development officers for project identification and for assessors and evaluators of project impacts. Socio-economic centres and centres for women in development studies will also find the paper useful.

Paying the Piper, an overview of community financing of water and sanitation. by Phil Evans. Occasional Paper no. 18, 70 pp. US\$20.00

This paper is an overview of key issues and implications of moving towards greater financing by communities. The arguments for greater cost recovery from users are outlined, and put in the context of a number of practical and strategic problems in achieving this goal. The need to maximize the use of available financial resources is placed in the context of resources coverage needs in general, with sound financing being seen as a necessary but not sufficient condition for sustainable development. The document assesses the current state of knowledge and points to directions for further development in the 1990s.

The paper is intended for programme managers, planners and policy makers in developing countries who are involved in the implementation of water supply and sanitation projects.

Both publications are available from IRC.

OTHER PUBLICATIONS

Christopher R. Schultz and Daniel A. Okun (1992).
Surface Water Treatment for Communities in Developing Countries, 299 p.
Price: £ 12.95

This reprint of the 1984 edition will help engineers designing new water plants or upgrading old ones in developing countries that need information concerning appropriate, economic water treatment. It will also help planners and policy makers to take an initial step towards the development of simple design criteria and standard design manuals that are tailored for local conditions. The publication discusses the basic considerations that must be

addressed before the actual design of water treatment plants, and then presents a series of appropriate treatment requirements and processes for plants that are to be designed for communities in developing countries, covering the topics of pre-treatment, chemicals and chemical feeding, hydraulic rapid mixing, hydraulic flocculation, sedimentation and filtration. The book also presents some standardized designs, particularly those pertaining to package and modular design plants. Finally, cost data for water treatment plants, and the human resources needed to operate and maintain plants, with associated training requirements, are reviewed.

The book is intended for planners and engineers responsible for the design of water treatment plants to be built in Africa, Asia and Latin America.

Available from:

*Intermediate Technology Publications
 103-105 Southampton Row
 London WC1B 4HH, United Kingdom
 Tel: 01-436-9761, Fax: 01-436-2013*

IRC Programme Officer Accepts New Post

Mr. Teun Bastemeijer, Programme Officer for Training and Maintenance Development at IRC, will be leaving as of 1 July to assume a position with the Netherlands Organization for Development Cooperation (SNV).

Mr. Bastemeijer will be stationed in Dar es Salaam, Tanzania, where he will hold the post of field director, dealing with various development sectors. In his new post he will give particular attention to the interface between sectoral programmes and intersectoral community-based, or bottom-up development programmes. Mr. Bastemeijer has been a dedicated colleague for seven years - we wish him well in his new position and hope to see him back at IRC in the future.

Chief Editor	Dick de Jong
Editor:	Nicolette Wildeboer
Lay-out:	Lauren Wolves
with contributions from:	Sibanda Zanamwe,
	Willem van Hardewijk, and
	Phil Evans

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EARTH SUMMIT IN RIO - FRESHWATER CHAPTER IN AGENDA 21 AMENDED

This is the third in a series of articles on developments in the area of freshwater around the United Nations Conference on Environment and Development held in Rio de Janeiro. For the remainder of 1992 we will cover the activities suggested in the amended Agenda 21 in each of several areas related to freshwater, as listed in our May issue. In that issue we began with the activities planned for drinking water supply and sanitation. Aside from financing, which we covered in our June issue, scientific and technological means, human resources development and capacity building are also crucial factors in achieving successful implementation of the intended drinking water supply and sanitation activities.

A second area related to freshwater, integrated water resources development and management activities, will also be covered in this article.

Scientific and Technological Means

To ensure the feasibility, acceptability and sustainability of water supply services, technologies should be responsive to the needs and constraints pertinent to the communities concerned. International support programmes should address the pursuit of low-cost scientific and technological means, utilization of traditional and indigenous practices to maximize and sustain local involvement, and assistance to country-level technical/scientific institutes to facilitate curricula development in support of the water and sanitation sector.

Human Resources Development

For effective planning and management of water supply and sanitation at the national level, and to utilize funds most effectively, countries must establish manpower development plans to assure sufficient trained professional

and technical staff. The development of country-level training institutions should be enhanced so that they can play a pivotal role in capacity-building. Adequate training should be provided for women in sustainable maintenance of equipment, water resource management and environmental sanitation.

Capacity Building

Together with UN agencies and ESAs, national agencies should support national programmes and develop mechanisms and procedures to collaborate at all levels. Overall capacity-building, including institutional development, coordination, human resources, community participation, health and hygiene education, literacy, etc. have to be developed as fundamental to any efforts to improve health and socio-economic development through water supply and sanitation and their impact on the human environment. Technical cooperation among developing countries is crucial, owing to the available wealth of information and experience, and to avoid reinventing the wheel. This has proved cost-effective in many countries already.

INTEGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT ACTIVITIES

Water resources have to be protected, as water is an integral part of the ecosystem, a natural resource, a social good, and an economic good, the quality of which determines its utilization. In developing and using water resources, priority has to be given to the satisfaction of basic needs and the safeguarding of ecosystems. Beyond these requirements, however, water users should be charged appropriately.

Suggested activities to be implemented by all states, according to their capacity and available resources, and through bilateral or multilateral cooperation, are as follows:

- formulation of costed and targeted national action plans and investment programmes
- integration of measures for the protection and conservation of potential sources of freshwater supply, including the inventorying of water resources, with land-use planning, forest resource utilization, protection of mountain slopes and riverbanks and other relevant development and conservation activities;
- development of interactive databases, forecasting models, and economic planning models, methods for water management and planning, including environmental impact assessments;



- optimization of water resources allocation under physical and socio-economic constraints;
- implementation of allocation decisions through demand management, pricing mechanisms and regulatory measures;
- flood and drought management, including risk analysis and environmental and social impact assessment;
- promotion of schemes for rational water use through public awareness raising, educational programmes, levying of water tariffs and other economic instruments;
- mobilization of water resources, particularly in arid and semi-arid areas;
- promotion of international scientific research cooperation on freshwater resources;
- development of new and alternative sources of water supply such as seawater desalination, artificial groundwater recharge, use of marginal-quality water, wastewater reuse and water recycling;
- integration of water quantity and quality management including surface and underground water resources;
- promotion of water conservation through improved water use efficiency and wastage minimization schemes for all users, including the development of water-saving devices;
- support to water users groups to optimize local water resources management;
- development of public participatory techniques and their implementation in decision-making, particularly the enhancement of the role of women in water resources planning and management;
- development and strengthening, as appropriate, of cooperation, including mechanisms where appropriate, at all levels concerned.

Financing and Cost Evaluation

The Conference Secretariat has estimated the average total annual cost (1993-2000) of implementing these activities to be about US\$115 million from the international community on grant or concessional terms. These are indicative and order of magnitude estimates only, and have not been reviewed by governments. Actual costs and financial terms will depend upon, *inter alia*, the specific strategies and programmes governments decide upon for implementation.

Scientific and Technological Means

The application of new techniques to gather, analyze and display information and to optimize decision-making will be necessary to develop interactive databases. The development of new and alternative sources of water supply and low-cost water technologies will require innovative applied research.

The various options for charging water users will have to be further evaluated and field-tested, and field studies on willingness to pay should be conducted in rural and urban situations.

Water resources development and management should be planned in an integrated manner, incorporating environmental, economic and social considerations, and taking into account both long- and short-term planning needs.

The role of water as a social, economic and life-sustaining good should be reflected in demand management mechanisms and implemented through water conservation and re-use, resource assessment and financial instruments.

Setting of priorities for private and public investment should take into account the maximum utilization of existing projects, through maintenance, rehabilitation and optimal operation; new or alternative clean technologies; and environmentally and socially benign hydro-power.

Human Resources Development

The delegation of water resources management to the lowest appropriate level necessitates the education and training of water management staff at all levels, and ensuring that women participate equally in these education and training programmes.

To build up the capacities within communities to be able to implement these principles, suggested activities include awareness creation programmes, training of water managers at all levels, strengthening of training capacities in developing countries, appropriate training of professionals, improvement of career structures, and sharing of appropriate technology, both for collection of data and for implementation of planned development.

Capacity Building

Institutional capacity for implementing integrated water management should be reviewed and developed when there is a clear demand. Although water is managed at various levels, demand-driven management requires the development of water-related institutions at appropriate levels, taking into account the need for integration with land use management.

International agencies and donors have an important role to play to support developing countries in creating the required enabling environment for integrated water resources management. This should include, as appropriate, donor support to local levels in developing countries, including community-based institutions, non-governmental organizations and women's groups.

In our next issue we will cover water resources assessment and the protection of water resources, water quality and aquatic ecosystems.

This information was provided by the Geneva Office of the United Nations Conference on Environment and Development.

ENVIRONMENTAL MESSAGES IN INDIAN CINEMA HALLS AND TV

In a recent case the Supreme Court in India has set in motion a process by which environmental awareness of the public in India is to be increased. Indian television (Doordarshan) and All India Radio have been directed to produce 5 to 7 minutes of programming daily containing messages on the environment, and a weekly half-hour programme on the subject.

In the "M.C. Mehta vs. Union of India Case" the Supreme Court directed the Collectors of districts in States and Union territories to ensure that cinema halls and video parlours exhibit two slides on environment and pollution in each show, as a condition for issue of license to these establishments.

This was reported in the NEERI-The Hitavada Environment Special "Only One Earth - Care and Share", a supplement to The Hitavada, a local English daily, published in Nagpur. The supplement appeared on June 5, while the United Nations Conference on Environment and Development (UNCED) was taking place in Rio de Janeiro. NEERI (The National Environmental Engineering Research Institute) is the organization which prepared the country's Prospective National Environmental Plan.

The emergence of the concept of sustainable development has brought about the general realization that societal perceptions must shift towards ecological determinism so as to achieve qualitative growth within the limits of the ecosystem's carrying capacity, NEERI director Prof. P. Khanna writes. "Efforts should be made to link population planning with development planning and environmental action to ensure equitable distribution of the benefits of economic growth."

The role of enlightened public participation in decision-making related to environmentally compatible development is well-recognized. In pursuance of the role that newspapers could play in increasing public participation, NEERI joined hands with The Hitavada to bring out this special supplement on environment.

BOREHOLE REHABILITATION IN KENYA

The Masai tribe in Kenya is increasingly facing problems with water resources. A recent survey from the Arid and Semi-Arid Land Development Ministry in the Kajiado district in Kenya showed that over 60% of the 400 boreholes in the region were not functioning. For a tribe living with and from their cattle, water is essential. While travelling in the region the editor came across 80 to 150-meter deep boreholes equipped with diesel pumps driven by engines dating back to 1940. One third of these pumps were installed by the Ministry of Water Development and one-third by the county council. In the past both these

institutions have experienced difficulty in assisting the Masai communities to keep their boreholes running.

Some of the boreholes and pumps are being operated and managed well. One of the groups has been running a system since 1974, and making a profit of 2000 Kenyan shillings per month. The money is invested in new cattle as a reserve for more difficult times. The survey also showed that about 100 of these boreholes could be relatively easy rehabilitated. A new borehole and pump easily costs 2 million shillings. A mechanical overhaul of an existing pump can be done for 40,000 shillings. In this region, where overgrazing by cattle is already causing erosion, the Kenyan Government wanted to put the emphasis on rehabilitation.

Certain groups approached the African Medical and Research Foundation for help. AMREF and the ASAL Ministry joined hands in a recently initiated project for short- and long-term borehole maintenance in the region. The Ministry puts in US\$ 25,000 and with money from AMREF Netherlands (together roughly 30% of the funds needed for five years) the project has gotten off to a start. In May the first 25 borehole operators were brought together for a week of training in pump and engine maintenance and operation.

The first sites which are to be rehabilitated have been selected. The first engines are being overhauled by a GTZ-supported workshop within the Ministry of Water, which requested to have defunct engines as payment rather than money. In that way the artisans in this workshop can be trained to do these repairs. Another goal of the project is to create a long-term maintenance facility which is supposed to continue to function long after AMREF support ceases. Private sector companies have also shown interest in assisting the Masai communities. One of the suppliers of spare parts has already agreed to set up a spare parts outfit in Kajiado, to avoid the costly 2 1/2 hour drive from Nairobi.

"The Masai consider water as essential for their cattle. Only if their cattle have drunk do they think about their own drinking water," says Melvin Woodhouse, the AMREF coordinator in the jeep taking us through the beautiful bush land of the Masai. En route we see that none of the boreholes or traditional cattle wells have a provision for drinking water. Children dig in the ground and with a bowl, carefully fill their containers.

Mr. Woodhouse brings a driller/technician to the community where the engine is being overhauled. From an established AMREF project in Kibwezi two artisans come together with equipment to refurbish the pumphouse. The discussion in Masai with community leaders, the borehole operator and bystanders concentrates on what they have to contribute in cash and in kind: some 50% of the costs. Work starts even before we leave.

In Masai communities investment in repairing such a vital commodity should reap results as soon as possible, not only because a dependable water supply is essential, but because rehabilitating boreholes also serves to limit the spreading of overgrazed areas.

Aside from the borehole project, AMREF also plans to bring drinking water supplies to schools and markets. So soon after the Earth Summit in Rio de Janeiro, it was good to see in practice how water resources, water for productive purposes and food, drinking water and environmental degradation are all part of the reality in rural areas such as in Kajiado district in Kenya. Once fully funded, this recently initiated project can become a powerful example of joint action by communities, an NGO, a ministry and the private sector to solve these problems.

IRC PUBLICATIONS

In the context of IRC's Piped Supplies for Small Communities projects in Malawi and Zambia, funded by the Netherlands Directorate-General for International Cooperation, the IRC Occasional Paper no.5 "Making the Links - guidelines for hygiene education in community water supply and sanitation" has been translated into Chichewa. "Making the Links" describes how to promote community-based hygiene education, and discusses the main water and sanitation-related diseases and how they can be prevented or reduced.

Messrs. Fabiano Kwaule of the Malawi Water Department and Frank Malembetsa, a primary school teacher, translated the book because the projects needed a good manual about hygiene education and its link with water supply and sanitation for their extension workers, consisting of community development assistants, health assistants and water monitoring assistants. Of the 1000 copies printed by IRC, half will be used by the projects' extension workers, and the remainder will be distributed to extension workers from the Ministries of Health and of Community Services in both countries. Excerpts from the translated book will also be reproduced for training of borehole committee members and PSSC tap committee members.

INTERNATIONAL CONGRESS ON METROPOLITAN AREAS AND RIVERS

The "Metropolitan Areas and Rivers" congress to be held in Rome, Italy from 5 - 8 December 1992 will focus on the problems facing rivers which pass through areas of concentrated urban development. The congress will be an occasion for hydraulic engineers, hygienists, hydrobiologists and urban planners to compare their backgrounds and knowledge of these problems and share the directions taken and operational alternatives for managing the situation of rivers and cities. Aspects covered are quality of rivers in metropolitan areas, including present

situations, quality objectives, and monitoring methods; and planning and management problems, including legal and institutional aspects, technical aspects, and the river as an element of the city.

The congress is organized by Azienda Comunale Energia e Ambiente (ACEA), under the auspices of the International Water Supply Association (IWSA) and the International Association for Water Pollution Research and Control (IAWPRC).

*Additional information can be obtained from:
Organizing Secretariat "Metropolitan Areas and Rivers"
Studio Ega srl Viale Tiziano, 19
00196 Rome,
Italy*

"WATER AFRICA 93" EXHIBITION AND FIRST SOUTHERN AFRICAN WATER AND WASTEWATER CONFERENCE

The "Water Africa 93" Exhibition and the First Southern African Water and Wastewater Conference will be held in Johannesburg, South Africa from 20-23 September 1993. The conference is intended to allow the nations of Southern Africa to share their knowledge, experience and technology to evolve the most cost-effective means of finding, treating, storing, conserving and recycling water, while at the same time improving the quality of sanitation services and the disposal of industrial effluents.

Papers are invited and synopses should be sent before 1 October 1992 to the organizer:

*Tracy Nolan
1st Southern, Africa Water and Wastewater Conference
212 Molyneux Road
Liverpool L6 6AW
United Kingdom
Tel: +44 (0)51 263-7552/Fax: +44 (0)51 260 4097*

ERRATUM

In IRC Newsletter 208, June 1992, the price of the new IRC publications should have been Dfl 20.00/US\$ 11.00, not US\$ 20.00. We regret any inconvenience this may have caused.

Chief Editor:

Dick de Jong

Editor:

Nicolette Wildeboer

Lay-out:

Lauren Wolvers

with contributions from:

Geneva Office of the

United Nations Conference on
Environment and Development

Newsletter No. 210, September 1992

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FRESHWATER CHAPTER IN EARTH SUMMIT'S AGENDA 21: WATER RESOURCES ASSESSMENT

In this fourth article on developments in the area of freshwater around Agenda 21 of the United Conference on Environment and Development held in Rio de Janeiro, we will deal with water resources assessment. Due to limited space, we have chosen to concentrate on water resources assessment as it relates to drinking water supply and sanitation. For information regarding agriculture, aquaculture and industrial uses of water and their relation to water resources assessment, you may wish to contact the UNCED office in Geneva.

WATER RESOURCES ASSESSMENT

Water resources assessment, including the identification of potential sources of freshwater supply, is the continuing determination of sources, extent, dependability and quality of water resources and of the human activities which affect these resources. It is also the practical basis for their sustainable management and a prerequisite for evaluation of the possibilities for this development.

The overall objective is to ensure the assessment and forecasting of the quantity and quality of water resources, in order to estimate the total quantity of water resources available and their future supply potential, to reflect their current quality status, to predict possible conflicts between supply and demand, and to provide a scientific database for rational water resource utilization.

Suggested activities that could be implemented towards reaching these objectives are manifold. The ones we found most significant are listed below:

Institutional Framework

- establishment of appropriate policy frameworks and national priorities;
- establishment and strengthening of institutional capability of countries that are required to ensure the adequate assessment of their water resources and the provision of flood and drought forecasting services;
- establishment and maintenance of effective cooperation at the national level between the various agencies responsible for the collection, storage and analysis of hydrological data;
- cooperation in the assessment of transboundary water resources, subject to the prior agreement of each riparian state concerned.

Data Systems

- review of existing data collection networks and assessment of their adequacy, including those that provide real time data for flood and drought forecasting;
- improvement of networks to meet accepted guidelines for the provision of data on water quality and quantity for surface and groundwater, as well as relevant land use data, and application of standards and other means to ensure data compatibility;
- upgrading of facilities and procedures used to store, process and analyze hydrological data and make such data and the forecasts derived from them available to potential users;
- establishment of databases on the availability of all types of hydrological data at the national level;
- implementation of 'data rescue' operations, e.g. establishment of national archives of water resources.

Data Dissemination

- identify the need for water resources data for various planning purposes;
- analyze the present data and information on water resources for use in environmental protection strategies and in the design and operation of specific water-related projects.

Research Development

- establish or strengthen research and development programmes at the national, subregional, regional and international levels in support of water resources assessment activities;
- monitor research and development activities to ensure that they make full use of local expertise and other local resources and that they are appropriate for the needs of the country or countries concerned.



Financing and Cost Evaluation

The Conference Secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about US\$ 355 million including about \$145 million from the international community on grant or concessional terms. These are indicative and order of magnitude estimates only, and have not been reviewed by governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes governments decide upon for implementation.

Scientific and Technological Means

Prior to conducting research, it is necessary to prepare catalogues of the water resources information held by government services, private sector, educational institutes, consultants, local water use organizations and others.

Important research needs include development of global hydrological models in support of analysis of climate change impact and of macro-scale water resources assessment; closing the gap between terrestrial hydrology and ecology at different scales; and study of the key processes in water quality genesis, closing the gap between hydrological flows and biochemical processes. The research model should build upon hydrological balance studies and also include the consumptive use of water. This approach should also, when appropriate, be applied at the catchment level.

Water resources assessment necessitates the strengthening of existing systems for technology transfer, adaptation and diffusion, and the development of new technology for use under field conditions, as well as the development of endogenous capacity.

Human Resources Development

Water resources assessment requires the establishment and maintenance of a body of well-trained and motivated staff sufficient to undertake the above activities. Educational and training programmes on water-related topics within an environmental context should be established or strengthened at the local, national, subregional or regional levels, and should be designed to ensure an adequate supply of trained personnel. In addition, the provision of attractive terms of employment and career paths for professional and technical staff, both men and women, should be encouraged. Human resource needs should be monitored periodically, including all levels of employment.

Capacity Building

For enhanced national capacities to conduct water resources assessment activities, support action is necessary as follows:

- review of the legislative and regulatory basis of water resources assessment;
- facilitate close collaboration between water sector

agencies, particularly between information producers and users;

- implement water management policies based upon realistic appraisals of water resources conditions and trends;
- strengthen the managerial capabilities of water users groups to improve water use efficiency at the local level, including women, youth, indigenous people and local communities.

Next time we will discuss the protection of water resources, water quality and aquatic ecosystems, as they relate to drinking water supply and sanitation.

We thank the Geneva Office of UNCED for providing this information. Additional information can be obtained from:
United Nations Conference on Environment and Development, Information Office
 P.O. Box 80
 CH 1231 Conches
 Switzerland
 Tel (41-22) 789-1676 / Fax (41-22) 346-6815

WATER AND SANITATION COLLABORATIVE COUNCIL WORKING GROUP LEADERS MEET IN THE HAGUE

6-7 September marked the first meeting of the leaders of the seven working groups of the Water and Sanitation Collaborative Council since the establishment of the groups at the Oslo Global Forum in 1990. The leaders, together with the Council's Chairperson Ms. Margaret Catley-Carlson, the Executive Secretary Mr. Ranjith Wirsinha, and the Deputy to the Executive Secretary Mr. Bryan Locke, met to review the progress over the past year and to plan activities for the coming year, in preparation of the Council's next meeting in Rabat, Morocco from 7-10 September 1993. The working groups concern urban issues; gender issues; applied research; operation and maintenance; IEC - information, education, communication; information management and country-level collaboration.

A few words with the Chairperson shed some light on the current situation in the sector, the Council and its working groups. During the International Drinking Water Supply and Sanitation Decade over 1 billion people were provided with drinking water. As population increases faster than the rate of coverage, the number of unserved continues to grow. "The first priority has to be making the best use of the US\$ 3 billion or so already going to the water sector every year," said Ms. Catley-Carlson. Success in closing the gap depends on the effectiveness of investments made by communities and governments in developing countries, as well as donors, in the sector. The more effectively the Council works, the more it can effect priority-setting, to make good use of scarce resources. Financial resources used wisely will attract more financial resources.

With the belief that defining what ought to be is not what gets you there, but rather the steps along the way, the Council did not assign goals in Oslo, but instead tried to determine issue areas, which led to the formation of the working groups.

Whereas prior to the Oslo Global Forum the Council was preoccupied with how to set forth its existence, according to Ms. Catley-Carlson, it is now discovering that it has something unique to offer compared to other sector groups. Through its working groups, which are of an ad-hoc nature, and which operate with limited resources, it has the ability to synthesize the collective wisdom to produce pragmatic advice to sector professionals, without conducting research or publishing documents. "I'm happy with this very pragmatic approach to pulling together our collected wisdom," remarked Ms. Catley-Carlson. Take the case of gender issues, for example. Instead of producing a paper dwelling on the fact that women are not sufficiently involved, the group has managed to integrate the awareness that women must be involved into the work of the other six working groups. In the same way, IEC and applied research are cross-cutting issues, which should be incorporated into the work of all the other groups.

"I'm happy with this very pragmatic approach to pulling together our collected wisdom"



Ms. Margaret Catley-Carlson

In the coming months, various Working Groups will have additional meetings to prepare outputs by the end of May 1993, to be ready in time for the September 1993 meeting in Rabat. The consolidated work of the different groups is to result in what Ms. Catley-Carlson calls a 'guidelines and tools package' which is to be offered to the sector during the Council meeting in Morocco.

The participants at the meeting in The Hague also exchanged views about the theme and tentative programme for the Morocco meeting. The Moroccan Government and Collaborative Council are working on finalization of the programme.

BIOGAS TECHNOLOGY IN NEPAL

The population of Nepal is growing at an annual rate of more than 2.5% This places an increasing strain on the country's energy resources, most of which come directly or indirectly from the forests. In this context it is possible to envisage the importance of biogas as a viable and renewable energy resource for Nepal.

Biogas plants have operated well on the Terai and lower hills of Nepal. The kingdom numbers more than 7,000 plants throughout 54 districts. Around 15% of the plants have been linked to toilets. One of the advantages of this is that people are encouraged to dispose of their excreta hygienically.

Currently, the Government offers a lumpsum of Rs 7,000 as subsidy for all plants except those built in the Nagarpalika bazaar areas. The hilly areas of the country can also receive an additional subsidy of Rs 3,000 to cover the costs of transporting raw materials.

A variety of feedstocks can be used in biogas plants. In Nepal cattle or buffalo dung is the most common raw material. Given the depletion of forest resources and falling numbers of cattle/buffalo, it would be unwise for the country to depend solely on this raw material for biogas production.

There is a need to consider alternative feedstocks to enable biogas plants to be cheaper and viable for longer periods. In this context, possible alternatives include nightsoil, kitchen wastes, industrial wastes, agricultural wastes or by-products and several weeds.

There seems to be no doubting that toilets attached to biogas plants in rural areas have led to an improvement in environmental sanitation, so that the quality of drinking water and soil sanitation have improved. The reduction of health risks in this way perhaps warrants the encouragement of this kind of technology on a wider scale. Toilets attached to biogas plants improves the sanitation of rural areas and encourages the development of a sound environment.

(Source: Biogas Newsletter, no. 39, May 1992, pp. 1-2)

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Senior Officer

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Kupondole, Lalitpur

Nepal

AFRICAN HOUSING FOUNDATION ASSISTS IN WELL DEVELOPMENT IN KENYA

The Turkana are nomadic people living in the vast deserts and scrublands of Isiolo District in Kenya's Central

Highlands. Water is the focus of life there, and is both friend and foe to the 8,000 Turkana in Isiolo. Scarce rainfall produces scorched rivers and streams, that yield little water for animals and people. A lack of dams and high evaporation rates additionally impede water collection. The Turkana are therefore forced to hike long distances in search of a working borehole or well.

Ngaremara Project

At Ngaremara in Isiolo, the water is often contaminated by animal and human waste, disease is prevalent and the infant mortality rate is 15%. Dependable and clean water supply, villagers say, would allow greater social and economic development of the communities in Isiolo, which at one person per kilometre is one of the least populated districts in all of Kenya. The African Housing Fund (AHF), with financial assistance from SIDA, is assisting the families in Ngaremara to develop their own wells. Under the first phase of the funding, six wells will be hand-dug by expert artisans and equipped with easy to operate handpumps.

The Ngaremara project is expected to have a tremendous impact on the villagers' lives. The 150-family community has been hampered by an acute water shortage. The 14-kilometre return trek to the Atain River to fetch water takes six hours per day. Now that a well is being dug at a selected site in the village located some 15 kilometres from Isiolo Town, the hub of commercial activity, the women of the village will be able to invest more of their energy into productive tasks. The 200 members of the Ngaremara Women's Group are hoping that the digging of wells will be the first step toward development. With a water source readily available, they are making plans to construct sturdy permanent shelters to protect them from wild animals.

(Source: *African Housing Fund Community Builders Bulletin*, no. 2 1991 pp. 1-3)

NEW IRC PUBLICATION

Water Harvesting. A Guide for Planners and Project Managers. Michael D. Lee and Jan Teun Visscher
Technical Paper no. 30.

This document describes key issues to take into consideration when planning water harvesting systems and shows the main features of the Arid and Semi-Arid Lands environment including landscape profiles. It provides a description of the main water harvesting systems, grouped under four headings: rooftop harvesting, surface harvesting, underground harvesting and runoff farming.

The document is intended to introduce planners, decision makers and project managers to where water harvesting fits into the overall picture of appropriate and sustainable community water supply development. It particularly emphasizes the aspects related to community involvement,

which is shown to be crucial to the development of sustainable systems. Techniques and systems need to be selected together with the community and due attention is needed to ensure that they match the skills of the people, so that systems can be maintained and extended when project interventions are no longer taking place. It also summarized financial and economic issues related to rainwater harvesting and potential financing arrangements.

Water Harvesting. A Guide for Planners and Project Managers was prepared with financial support from the Danish International Development Assistance (Danida).

UPCOMING EVENTS

International Conference on Women and Environment

From 1-3 December the International Conference on Women and the Environment will be held in Alexandria, Egypt. The conference, sponsored by WHO and UNDP, will focus on the roles of women as environmental conservationists, and obstacles to women's role.

Additional information can be obtained from:

Prof. Dr. Samia Galal Saad
Dept. of Environmental Health
High Institute of Public Health
165 El-Harriya Ave.
Alexandria, Egypt
Tel: 002 (03) 4215575/6 / Fax: 002 (030) 4218436

6th International Conference on Rainwater Catchment Systems

The 6th International Conference on Rainwater Catchment Systems will be held in Nairobi, Kenya from 1-6 August 1993. The theme of the conference will be 'participation in rainwater collection for low-income communities and sustainable development'. Airmailed abstracts for papers must be received by 31 December 1992.

Additional information can be obtained from:

John Mbugua
International Conference on Rainwater Cistern Systems
PO Box 56
Nakuru
Kenya
Fax: 254-2-716-254

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**FRESHWATER CHAPTER IN EARTH
SUMMIT'S AGENDA 21: PROTECTION OF
WATER RESOURCES, WATER QUALITY
AND AQUATIC ECOSYSTEMS**

As a continuation of our series concerning the freshwater chapter in Agenda 21 of the United Nations Conference on Environment and Development held in Rio de Janeiro in June of this year, this issue will deal with protection of water resources, water quality and aquatic ecosystems as this relates to drinking water supply and sanitation.

The complex interconnected nature of freshwater systems demands that freshwater management takes a catchment management approach, and that it be based on a balanced consideration of the needs of people and environment. The three objectives which will have to be pursued concurrently to integrate water quality aspects into water resources management are maintenance of ecosystem integrity, public health protection and human resources development.

ACTIVITIES

Selections from the activities which Agenda 21 suggested states could implement are:

Water Resources Protection and Conservation

- establishment and strengthening of technical and institutional capacities to identify and protect all potential sources of water supply;
- identification of potential sources of water supply;
- preparation of national plans for water resources protection and conservation;
- rehabilitation of important but degraded catchment areas, particularly on small islands;
- strengthening of administrative and legislative measures to prevent encroachment into existing and potentially useable catchment areas.

Water Pollution Prevention and Control

- application of the polluter pays principle, where appropriate, to all kinds of sources including on- and off-site sanitation;
- promotion of the construction of treatment facilities for domestic sewage, and the development of appropriate technologies;
- introduction of the precautionary approach in water quality management;
- mandatory environmental impact assessment on all major water resources development projects potentially impairing water quality and aquatic ecosystems;
- identification and application of best environmental practices at reasonable cost to avoid diffuse pollution.

Groundwater Protection

- developing agricultural practices that do not degrade groundwaters;
- application of the necessary measures to mitigate saline intrusion into aquifers of small islands and coastal plains as a consequence of sea level rise or of overexploitation of coastal aquifers;
- prevention of aquifer pollution through the regulation of toxic substances that permeate the ground and the establishment of protection zones in groundwater recharge and abstraction areas;
- design and management of landfills based on sound hydro-geological information and impact assessment, using appropriate technology;
- promotion of measures to improve the safety and integrity of wells and wellhead areas to reduce intrusion of biological pathogens and hazardous chemicals into aquifers at well sites;
- water quality monitoring, as needed, of surface and groundwaters potentially affected by sites storing toxic and hazardous materials;
- treatment of municipal waste water for safe reuse in agriculture and aquaculture.

MEANS OF IMPLEMENTATION

The Conference Secretariat has estimated the average total cost (1993-2000) of implementing all of the activities of this programme to be about US\$ 1 billion including about \$340 million from the international community on grant or



concessional terms. These are indicative and order of magnitude estimates only and have not been reviewed by governments.

The document identifies a number of scientific and technological means towards implementing the suggested activities. It also calls for innovative approaches for professional and managerial staff training. Finally, it is concluded that the effective protection of water resources from pollution requires considerable upgrading of most countries' present capacities and infrastructure.

In our next issue, we will focus on water and sustainable urban development.

We thank the Geneva Office of UNCED for providing this information. Additional information can be obtained from:
United Nations Conference on Environment and Development, Information Office
 P.O. Box 80
 CH 1231 Conches
 Switzerland
 Tel (41-22) 789-1676/Fax (41-22) 346-6815

WHAT MAKES HYGIENE EDUCATION PROJECTS SUCCESSFUL?

What can we learn from the practical experiences of hygiene education professionals that makes hygiene education in water supply and sanitation projects more successful? In-depth interviews with hygiene education professionals and a mail survey conducted by a health sciences student working with IRC provided answers relating to planning, participation and communication, staffing, organization and cooperation, and finance.

Planning

The experience of hygiene educators indicates that the success of hygiene education is strongly influenced by a sound planning process. A well-planned hygiene education programme takes local conditions into account, and a community diagnosis or baseline study conducted with active participation of community members and project staff is indispensable. Clear objectives are a prerequisite, and regular monitoring and evaluation to allow timely adaptations of the programme are very beneficial.

The matching of hygiene education with technical and educational activities are also important factors contributing to success, as is taking into account the time availability of both community members and project staff.

Participation and Communication

There is little doubt that the active involvement of the target population in all phases of the hygiene education programme is the most important factor in achieving success, particularly the active participation of women. Furthermore, recognizing the differences between the beneficiaries and adapting the programme accordingly will increase the chance of success.

There were many suggestions as to more successful methods of communication. These should be participatory,

attractive, varied and practical, aimed at awareness raising and directed towards feasible improvements. Group sessions were recommended as a tool to allow for more opportunities for exchange of experiences and ideas. The need for pre-testing of newly developed hygiene education materials was emphasized, and there was a consensus that locally designed materials and activities tend to be more effective communication tools.

It was striking that a number of hygiene educators stressed the importance of paying attention to income-generating activities. Income opportunities can be an overriding factor for achieving success from hygiene education interventions.

Staffing

Availability of well-trained and qualified staff is an advantage. Staff should be carefully chosen and preferably be from the project area. It is impossible to achieve any success in a hygiene education programme when staff is not motivated. Not only are personalities important, incentives to enhance and sustain their motivation and enthusiasm should be provided. These can be financial or material. In addition, staff should be given regular support and additional training.

Organization and Cooperation

A major bottleneck reported by hygiene educators is a lack of good cooperation between the social/health section and the technical section of a water supply and sanitation project. To achieve better cooperation, it was suggested to organize combined training courses for all project staff. Cooperation is not only essential at field level, it is also important between field level and higher decision levels, particularly where field workers are dependent on the release of budgets or allowances from the higher government levels. Responsible ministries which display an attitude of cooperation and support have a positive influence on hygiene education programmes.

Finance

The availability of sufficient financial resources is an important pre-condition for achieving success from hygiene education interventions.

The information provided showed that a wealth of experience is available on how to make hygiene education more successful, but that commitment and collaborative efforts are needed by the various organizations and persons involved to make hygiene education work.

SUCCESSFUL PROMOTION ACCELERATES SANITATION COVERAGE IN BANGLADESH

A recent survey of 10,000 randomly selected households in Bangladesh revealed that new approaches have resulted in noticeable improvements in sanitation-related behavioral changes. The following figures compare the status at present to that of 1985.

- Use of sanitary latrines: 25% (up from 4%)
- Use of tubewell water for drinking: 92% (up from 80%)
- Use of tubewell water for all domestic purposes: 16% (up from 12%)
- Access to tubewell water within 150 metres: 85% (up from 75%)
- Practising handwashing with soap or ash after defecation: 27% (up from 5%)
- Practising handwashing before handling food: unchanged at 3%

Cole P. Dodge, UNICEF Representative in Dhaka, Bangladesh, conducted an analysis of UNICEF and Government sector investments in 1989 for the previous ten year period, to find out what caused the disparity between sanitation coverage (8%) and safe water supply (80%).

The low coverage level was in part due to the lack of preconditions in the sanitation programme: although the programme used all the funds available, it never met a single annual target for sanitation, despite that the popularity of the tubewell was a key motivational incentive for latrine construction. A new "Integrated Approach" programme now promotes sanitation through a precondition of latrine construction prior to installation of tubewells.

More importantly, anthropological research revealed that the 75% illiterate population built latrines for privacy, convenience, comfort of women, and prestige, a fact that was overlooked by UNICEF, probably because conventional wisdom only links latrines to health promotion. Between 1964 and 1978, all of Bangladesh was included in a water-scaled latrine programme. Promotion was based on the "health and germ" theory, and ignored the anthropological research findings. It seemed there was a sympathetic relationship between the educated planners and educated beneficiaries, but very little understanding of ordinary people.

It was clear that something had to be done. The experiences from the successful immunization programme in Bangladesh could be built upon for sanitation. Advocacy began with mobilizing senior Government staff from every ministry, members of parliament, the media, the NGO community, and others. The term "pathogen overload" was used to describe a situation in which no one - not even the elite - were free from water-borne diseases. Almost everyone had experience with hepatitis or diarrhoea.

The promotion seemed successful: a case was reported where a powerful cabinet minister had appropriated all the district production for his own village. For the first time, at least one politician sought latrine slabs as a valuable commodity.

Another means UNICEF found to promote sanitation was through the Ansars, a village-based organization which occasionally helps maintain law and order. UNICEF encouraged Ansars' top leadership to take on sanitation by promoting it among their immediate members, which

number four million nationally. In a very short period of time, various officers right down to the field level were trained in sanitation, with financial support from UNICEF and the Government.

Sanitation promotional materials were subsequently redesigned to focus on women to develop a habit of using sanitary latrines, based on their preferences and cultural values rather than on UNICEF's goal of reducing diarrhoea through improved personal hygiene. Promotion was oriented towards reinforcing on-site sanitary latrine use, as many people were using hanging latrines located on the outskirts of villages.

A clear social mobilization strategy was also necessary. Advocacy for sanitation involved convincing politicians and senior government decision makers that sanitation was a top priority in the drive against diarrhoea which accounts for around 300,000 child deaths each year. The bias in favour of tubewells required a positive reinforcement approach and the argument of pathogen overload, and by 1992 there was sufficient conviction to enable the Prime Minister to address a national rally. A logo was unveiled, and he spoke on the need for increased awareness, action and involvement of women in sanitation.

Acceleration of sanitation in Bangladesh was thus made possible through focusing on the social aspects of sanitation, sharing of resources and close cooperation between government, external support agencies, and most importantly, local NGOs. For example, the Islamic clergy, who congregate each winter in mass meetings around the country facilitated Shamsuddin Ahmed of UNICEF's Communication Section to address 1,500,000 devotees at one such gathering. Here, half a million flyers promoting sanitation were distributed.

Through social mobilization and communications these partners worked to develop a strategy for participatory planning based on focused group discussions, anthropological research and low cost communication techniques. Sanitation messages were agreed on, field tested and disseminated.

Knowing that aggressive promotion linked to conditionalities might result in non-use of household pit latrines, UNICEF commissioned a local research institute to carry out a one-month in-depth anthropological study on latrine use patterns in two high coverage areas (more than 70%). Results show latrine utilization of over 90%. Well thought out promotion has thus indeed been successful in accelerating sanitation in Bangladesh.

IRC BRIEFING PROGRAMMES AND COURSES 1993

IRC has recently published its course programme for 1993. New among the Briefing Programmes is a programme which specifically includes gender issues: with the VENA Centre for Women and Autonomy, three special eight-day

Standard Briefing Programmes will be organized on *Water Supply and Sanitation and Gender Issues*. Three new Short Training Courses have also been added:

Community Management in Urban Water Supply and Environmental Sanitation Schemes with the Institute for Housing and Urban Development Studies, *Management and Implementation of Hygiene Education in Water Supply and Sanitation Projects*, and *Issues in Information Management, a Practical Approach*.

The successful Management for Sustainability course which was conducted in French in Ouagadougou, Burkina Faso last December, will be repeated there in January.

Briefing Programmes

January	11	-	15
February	8	-	12/17*
March	8	-	12
April	19	-	23
May	10	-	14/19*
June	14	-	18
August	16	-	20
October	4	-	8
November	8	-	12/17*
December	13	-	17

* During these periods the special eight-day course *Water Supply and Sanitation and Gender Issues* will also be offered.

Short Training Courses

Management for Sustainability in Water Supply and Sanitation Programmes (MDI/IRC):

January 25 - February 13	Burkina Faso (French)
March 8 - 16	The Netherlands
July 19 - August 6	Cameroon
August 30 - September 17	The Netherlands
December (tentative)	Burkina Faso (French)

Community Management in Urban Water Supply and Environmental Sanitation (IHS/IRC):

May 4 - 22	The Netherlands
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Management and Implementation of Hygiene Education in Water Supply and Sanitation Projects:

October 4 - 22	The Netherlands
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Issues in Information Management, a Practical Approach:

Organized upon request, subject to a sufficient number of applicants.

Further information can be obtained from IRC's training section.

COMING EVENTS

Management of Natural and Human Resources through Community Development

The International Association for Community Development, in collaboration with the Community Development Department of the Thai Ministry of the Interior, is organizing its annual international colloquium on "Management of Natural and Human Resources through Community Development" in Banglamung, Thailand from 19-22 April 1993. Additional information can be obtained from:

IACD 179, rue du Débarcadère 6001, Marcinelle, Belgium
Tel: (32-71) 366273 or 432921/Fax: (32-71) 471104

Water & Waste '93 in London

From 29 June to 1 July "Water & Waste 93" will be held at Olympia in Central London. Waste water treatment and the environment will feature strongly at the show, which has in the past been known as "World Water", and has concentrated on the water side of the industry. The exhibition will include a series of economically priced innovative workshops and seminars linking practical advice with hands-on demonstrations. Additional information can be obtained from Roger Kaye or Howard Phillips at:

Westrade Fairs Ltd.

28 Church St., Rickmansworth, Herts,
United Kingdom WD3 1DD

Tel: (44) 0923 778311/Fax: (44) 0923 776820

15th Congress of the International Commission on Irrigation and Drainage in The Netherlands

"Water Management in the Next Century" will be the theme of the 15th Congress of the International Commission on Irrigation and Drainage (ICID), to be held in The Hague, The Netherlands from 30 August to 11 September 1993. The congress, which should be of interest to all those involved in irrigation, drainage and flood control, will deal with planning and design of irrigation and drainage systems, irrigation and drainage systems management - institutional and financial interrelationships; irrigation and drainage in competition for water; and the impact of real-time information on system management. Additional information can be obtained from:

Netherlands National Committee, ICID Secretariat
P.O. Box 600, 8200 AP Lelystad, The Netherlands
Tel: (31) 3200 97440/Fax: (31) 3200 34300

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COMMUNITY MANAGEMENT IS AN APPROACH, NOT A FORMULA

Communities have a role to play in the management of improved water supply systems, but community management is an approach, not a formula. This was one of the key findings from an international workshop held at IRC from 4-10 November 1992, which reviewed community management experiences from the field.

Community management can take many forms, and can reflect a wide range of "balances" between community and agency contributions. Whatever the balance, however, it requires in all cases a substantial resource input from the community. It also requires a continuing partnership between communities and agencies, and communities and other supporting partners (including the private sector and, very importantly, other communities).

The workshop brought together field-based professionals and representatives from UNICEF, WHO, the Water Supply and Sanitation Collaborative Council, the Directorate-General for International Cooperation (DGIS) of the Netherlands, and IRC. Nine of the participants are working in projects and programmes in the field which are seeking to develop strong elements of community management.

Seven community management case studies were reviewed at the workshop, and additional background papers were provided by IRC and the UNDP/World Bank Water and Sanitation Program. Case studies were presented from: Aqua del Pueblo, Guatemala / Unit for Marginal Barrios of the National Water and Sanitation Agency (UEBM / SANAA), Honduras / Aga Khan Rural Support Programme, Pakistan / Pan African Institute for Development (PAID), Cameroon / CARE, Indonesia / UNICEF, Uganda / Support Rural Water Supply Department Project, Yemen.

KEY FINDINGS

Community management means "putting the community in charge".

The workshop avoided an over-specific definition as this was considered to be too limiting. Community management is an approach which has certain defining characteristics which distinguishes it from other approaches, including a relationship based on partnership between the community and agency.

Community management is something new and different.

While it has important continuities with, and builds upon, approaches based on community participation, it has new and wide-reaching implications for both communities and agencies. Supporting community management certainly will not mean less work for agencies. It means a different direction, moving from provision to facilitation, and demands work of higher quality.

Many communities are demonstrating a genuine willingness and capacity to take on management roles. Under the right conditions, community management works very well. Many communities have considerable capacity, if properly supported, motivated, and assisted, to develop suitable tools and methods.

Community management not only helps to solve water and sanitation problems but can also create an environment for broader development benefits.

Putting the community in charge can help solve problems such as the covering of recurrent costs and sustaining system reliability. It can also build capacity and confidence for wider development efforts, both within and beyond the water sector.

Community management not only addresses issues of sustainability but can also be a way to involve more communities in water and sanitation improvement programmes.

The taking up of a larger share of responsibility by communities frees supporting agencies to move forward in supporting more communities, without having to constantly go back to maintain older systems.

In building up the community management approach, new indicators are required to recognize and reward the "process" inputs and outputs which are essential to its success.

Many agencies in the field are trying to set in motion process-based approaches which are less easy to measure than technical outputs, like numbers of wells installed and so on. Governments and funding agencies may contradict



these efforts if they continue to confine themselves to conventional progress indicators, and do not reward efforts towards building capacity through less tangible processes. New tools and methods are required to monitor, measure, recognize, and reward such work.

Advocacy at all levels is required to support the further development of the community management approach. The full meaning and implications of taking up and supporting a community management approach must be clearly spelled out and communicated at all levels, from the community to global levels. This is essential to allay fears and misconceptions, and also to support the establishment of appropriate policy and legal frameworks necessary to create an "enabling environment" in which community management can flourish.

All of these findings can be substantiated with evidence from the field, as the workshop publication will show. This publication is nearly complete, and its availability will be announced in a future issue of this newsletter. Financial assistance for this workshop was provided by the UNDP/World Bank Water and Sanitation Program, UNICEF, and the Directorate-General for International Cooperation (DGIS) of the Netherlands.

FRESHWATER CHAPTER IN EARTH SUMMIT'S AGENDA 21: WATER AND SUSTAINABLE URBAN DEVELOPMENT

This is the final article on the developments in the area of freshwater around Agenda 21 of the United Nations Conference on Environment and Development held in Rio de Janeiro in June. We will concentrate on water and sustainable urban development as it relates to drinking water supply and sanitation.

Rapid urban population growth and industrialization are putting severe strains on the water resources and environmental protection capabilities of many cities. Early in the next century, more than half of the world's population will be living in urban areas. The objective of this programme is to support local and central governments' efforts and capacities to sustain national development through environmentally sound management of water resources for urban use. Strategies and actions should ensure the continued supply of affordable water for present and future needs, and reverse current trends of resource degradation and depletion.

ACTIVITIES

Protection of water resources from depletion, pollution and degradation

- introduction of sanitary waste disposal facilities based on environmentally sound low-cost and upgradable technologies;
- implementation of urban storm water runoff and drainage programmes;

- promotion of recycling and reuse of waste water and solid wastes;
- control of industrial pollution sources to protect water resources;
- protection of watersheds from depletion and degradation of their forest cover and from harmful upstream activities.

Efficient and equitable allocation of water resources

- reconciliation of city development planning with the availability and sustainability of water resources;
- satisfaction of the basic water needs of the urban population;
- introduction of water tariffs, by taking into account the circumstances in each country and where affordable, which reflect the marginal and opportunity cost of water, especially for productive activities.

Institutional/legal/management reforms

- adoption of a city-wide approach to the management of water resources;
- promotion at the national and local level of the elaboration of land use plans that give due consideration to water resources development;
- utilization of the skills and potential of NGOs and the private sector and local people, taking into account the public and strategic interests in water resources.

Promotion of public participation

- initiation of public awareness campaigns to encourage the public towards rational water utilization;
- sensitization of the public for the protection of water quality within the urban environment;
- promotion of public participation for the collection, recycling and elimination of wastes.

Support to local capacity-building

- development of legislation and policies to promote investments in urban water and waste management, reflecting the major contribution of cities to national economic development;
- provision of seed money and technical support to the local handling of materials supply and services;
- encouragement of autonomy and financial viability of city water, solid waste and sewerage utilities;
- creation and maintenance of a cadre of professionals and semi-professionals for water, waste water and solid waste management.

Provision of enhanced access to sanitary services

- implement water, sanitation and waste management programmes focused on the urban poor;
- make low-cost water supply and sanitation technology choices available;

- base choice of technology and service levels on user preferences and willingness to pay;
- mobilize and facilitate the active involvement of women in water management teams;
- encourage and equip local water association and water committees to manage community water supply systems and communal latrines, with technical back-up available when required;
- consider the merits and practicality of rehabilitating existing malfunctioning systems and correcting operation and maintenance inadequacies.

MEANS OF IMPLEMENTATION

Work on low-cost water supply and sanitation technologies should be continued, with particular emphasis on development of appropriate sanitation and waste disposal technologies for low-income high-density urban settlements. There should also be international information exchange, to ensure a widespread recognition among sector professionals of the availability and benefits of low-cost technologies.

Human Resources Development

Specific programme activities will involve the training and retention of staff with skills in community involvement, low-cost technology, financial management, and integrated planning of urban water resources management. The active participation of women, youth, indigenous people and local communities in water management teams, and for supporting the development of water associations and water committees should be facilitated. Special education and training programmes for women should be launched with regard to the protection of water resources and water quality within urban areas.

Capacity-building

A prerequisite for progress in enhancing access to water and sanitation services is the establishment of an institutional framework that ensures that the real needs and potential contributions of currently unserved populations are reflected in urban development planning. The multi-sectoral approach, which is a vital part of urban water resources management, requires institutional linkages at national and city levels.

Establishment of appropriate design standards, water quality objectives and discharge consents is among the proposed activities, and support for strengthening the capability of water and sewerage agencies, and for developing their autonomy and financial viability is also envisaged. Technical and financial support is needed to help countries to correct present inadequacies in operation and maintenance and build up the capacity to operate and maintain rehabilitated systems.

We thank the Geneva Office of UNCED for providing this information. Additional information can be obtained from:

United Nations Conference on Environment and Development, Information Office
P.O. Box 80
CH 1231 Conches
Switzerland
Tel (41-22) 789-1676/Fax (41-22) 346-6815

NEW THEORIES CONCERNING CHOLERA

The Peruvian cholera epidemic, perhaps the worst of the century, is believed to have started when a Chinese freighter moored in Lima harbour discharged contaminated bilge water containing a cholera strain found in Asia - V cholerae O1 biotype El Tor. DNA studies by scientists demonstrated "genetic identity" between strains found in Peru and Bangladesh. The El Tor strain of cholera had never before been recorded in Peru, where the V cholerae non-O1 strain, found in the country's sewage lagoons, is responsible for seasonal cases of cholera. However, the seasonal cycles of V cholerae O1 in countries where it is endemic coincide with the seasonal cycles of V cholerae non-O1 in Peru.

"Hibernation" Theory

Researchers searching for an explanation for the seasonal fluctuations of cholera, discovered that cholera bacteria "hibernate" under unfavourable conditions and attach themselves to algae and plankton. In 1990, scientists from Johns Hopkins University and the Maryland Biotechnology Institute found such cholera "reservoirs" off the coast of Bangladesh. These cholera reservoirs respond to changes in temperature, pH, salinity and nutrition raising the fear that global warming and the resulting oceanic changes will encourage the growth of plankton and algae, thereby increasing habitat for the "hibernating" cholera bacteria. As a result, scientists fear that cholera, at present seasonal, may become a year-round phenomenon.

Causes of Peruvian Epidemic

While the cholera reservoirs explain the seasonal nature of the disease, there are other reasons for the Peruvian epidemic. The high mortality rate in some Peruvian cities was largely associated with drinking contaminated water from the municipal system. Many cities in Peru discontinued chlorination of water after the US Environmental Protection Agency published studies to show chlorine enhances cancer risk and is responsible for around 700 cases of cancer each year in USA. The threat of cholera is obviously more dangerous than the threat of cancer.

The use of sewage water for irrigation of vegetables which are eaten raw, such as cabbages, has also been identified as a source of cholera. Even if wastewater were to be treated in waste stabilization ponds, as recommended by WHO,

V cholerae would still spread because blue-green algae (Anabaena variabilis) and various types of plankton would act as a reservoir for the cholera bacteria.

FUND TO FINANCE INNOVATIVE LOW-COST TECHNOLOGIES

The UNDP/World Bank Water and Sanitation Program, UNDP and UNICEF have launched a fund to provide seed money for the development of new or improved water and sanitation technologies in developing countries, which can help reduce the cost of extending water and sanitation services for the poor.

Called the Technology Promotion Facility, the new fund will have an initial budget of US\$ 125,000, and will allocate grants of up to US \$25,000 to inventors or manufacturers for the testing of low-cost, innovative technologies that can be produced locally. It is hoped that the fund will encourage local manufacturing capacities within developing countries.

For more information contact:

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WATER AND SANITATION TRAINING PROGRAMMES IN THE PHILIPPINES

The Tulungan sa Tubigan (Helping for Water) Foundation Inc. is a private, non-profit organization in Quezon City established to improve the quality of life of depressed communities in the Philippines by providing assistance to potable water supply projects. The training programmes offered by the foundation are designed to equip beneficiary groups and staff of organizations and agencies at the regional, provincial and municipal levels with the necessary tools and resources to enable them to effectively and efficiently manage community-based water supply and sanitation projects.

The courses currently offered are:

- Community Water Supply and Sanitation Project Management

- Water Health and Hygiene
- Mobilizing People for Water
- Community Mobilization Courses
- Training on Basic Community Organizing for Community Leaders
- Training for Community Water Project Volunteers
- Organization Building Course (Structure Building Seminar-Workshop)
- Project Development, Monitoring and Evaluation
- Management, Operation and Maintenance of Community Water supply and Sanitation Projects
- Design of Piped Water Systems
- Ferrocement Rainwater Cistern-Making Course

Additional information can be obtained from:

Tulungan sa Tubigan Foundation Inc.
2nd Flr Doña Maria Building
1238 EDSA Quezon City
Philippines

Tel: +63-2-35-84-91 / Fax: +63-2-922-17-57

EVENTS

URBAN ENVIRONMENT IN DEVELOPING COUNTRIES : FUTURES, IDEAS, DIRECTIONS, Eindhoven University of Technology, The Netherlands, 16-18 June 1993

Topics of this international conference include: civil engineering; solid waste collection and reuse; geographical and land information systems; and women's participation. Conference fees: US\$ 350

For further information contact: Secretary of Building Habitat and Urban Management International, Faculty of Architecture, Eindhoven University of Technology, PO Box 513, 5600 MB Eindhoven, The Netherlands tel: +31-40-473283 or 473308/fax: +31-40-452432

6TH INTERNATIONAL CONFERENCE ON RAIN WATER CISTERN SYSTEMS

Nairobi, Kenya, 1-6 August 1993

The focus will be on sustainability of rainwater systems, rainwater harvesting projects, community participation including the role of women, rainwater systems for the urban poor, and rural institutions. For further information contact: Mr. John Mbugua, Vice-President, IRCSA PO Box 56, Nakuru, Kenya fax: +254-2-716254

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Requests for information on IRC should be addressed to IRC, P.O. Box 93190, 2509 AD The Hague, The Netherlands.

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PARTICIPATORY APPROACHES SOLUTION TO URBAN WATER SUPPLY AND SANITATION PROBLEMS

Municipal authorities in developing countries are being faced with explosive urban growth which is largely the result of natural increase of the urban population, but also due to immigration from the rural areas. This growth is leading to a downward trend in the coverage of basic urban services such as water supply, sewerage and drainage. The capacity of existing systems is often stretched to the limits, while their functioning is deteriorating due to problems in management and financing of proper operation and maintenance procedures. Funds for the extension of the existing systems to meet the demand of the growing population are often not available or are used on an ad hoc basis.

The result of this situation is most pressing in the slum and squatter areas where large proportions of the total urban population in developing countries is living. These areas are also the focus of the population growth and are expected to double in population every 10-15 years. Most of the slums and squatter settlements are already characterized by lack of basic infrastructural facilities and access to land, and with increasing densities the situation will grow worse. The population of these settlements, who usually belong to the low-income categories, often have to pay more for their basic needs such as water than the more affluent residents of other parts of the cities who have a connection to the piped water supply system.

Where municipal authorities have provided basic infrastructure facilities in low-income settlements, mostly conventional approaches have been used. Design criteria

and standards have often not been appropriate for application in low-income areas and this has limited the number of people that could have been served using the budget available. At the same time, the services provided often do not address the needs and priorities of the population. Consequently people are not willing to pay for the services or to take responsibility for basic operation and maintenance.

Many governments have come to realize that with conventional strategies they will not be able to extend services to all urban residents and therefore in many countries projects are being carried out in which innovative approaches are being tried out, not only with respect to technical solutions for basic services, but also in ways to involve the target communities.

IRC was requested by the Dutch Government to prepare a paper on participative approaches in urban water supply and sanitation in Dutch-funded projects for the OECD/DAC meeting on urban development in November 1992. For this paper four projects were selected for analysis and on the basis of the case studies a number of key issues were highlighted, both at community level and at municipal level, which are of influence in participative approaches in urban water supply and sanitation programmes.

The case studies were the Baldia Soakpit Pilot Project (Karachi, Pakistan); the Kanpur Mirzapur Environmental Sanitary Engineering Project (Kanpur/Mirzapur, India); Phnom Penh Urban Improvement Project (Phnom Penh, Cambodia) and the Nyala/El Geneina Water Supply Project (Nyala/El Geneina, Sudan).

As preconditions for a participatory approach at community level were identified security of tenure, degree of social organization, involvement of women, motivation, selection based on demand. At agency level, the preconditions identified were the organizational framework (within government or outside government), willingness to work with communities, flexibility of both the technical and the social approach, integration of project components, sustainability of improvements (back-up services).

Because the assessment was only based on four Dutch funded projects, the identification of these preconditions can only be seen as preliminary. IRC is planning to make a more detailed analysis based on more projects carried out in urban areas. It would be greatly appreciated if readers could send names and details on urban projects with participatory elements to M. Wegelin, IRC.



THE SILENT ENVIRONMENTAL CRISIS

"From the point of view of millions of the poorest families on earth, a principal environmental concern is the ever-present threat of disease in their immediate surroundings. The greatest threat to their lives and health is not pollution of water by chemicals but pollution by faecal organisms, not industrial waste but human waste, and the greatest of their environmental problems is the lack of the clean water and safe sanitation which alone can prevent them against diarrhoeal disease, schistosomiasis, guinea worm, cholera and typhoid. This is the silent environmental crisis, and it takes its daily toll on the life and health of millions of those whose voice deserves to be heard in the environmental debate."

UNICEF in its *State of the World's Children 1993* calls for a worldwide mobilization of public and political support for the cause of meeting basic human needs. US\$ 25 billion a year can:

- bring major childhood diseases under control;
- halve the rate of child malnutrition;
- provide clean water and safe sanitation to all communities;
- make family planning available; and
- provide almost every child with at least a basic education.

If so much could be done for so many and for so little, then why is it not done? The extent of present neglect, says UNICEF, is a scandal of which the public is largely unaware. On average, the governments of the developing world are devoting little more than 10% of their budgets to helping the poor meet their needs for nutrition and health care, water and sanitation, education and family planning. Similarly, less than 10% of all international aid for development is devoted directly to meeting these most obvious of human needs.

But there is now an accumulation of reasons, says UNICEF, for believing that the age of neglect may be giving way to an age of concern. The most dramatic indication is the achievement of the 80% immunization target in the developing world - saving 3 million children's lives each year. Another example is the success of the promotion in the 1980s of some form of oral rehydration therapy against diarrhoea, which saves 1 million lives each year.

Only through massive popular concern, and through the practical and political energies of millions of people and thousands of organizations, will the commitments that have been made following the 1990 World Summit for Children be given a priority in national life. And only by such means will a new age of concern be born.

The State of the World's Children 1993 is edited and produced by P & L Adamson and published for UNICEF by Oxford University Press, ISBN 0-19-2623869, £ 4.00 in UK and \$ 7.50 in USA.

USAID RETHINKS WATER RESOURCES ASSISTANCE IN ASIA

Asia is pushing at the limits of its land and water resources. Proper management and conservation of water requires a level of cooperation and technical knowledge that may not have existed before. In this context the United States Agency for International Development (USAID) is reshaping its water resources support activities in Asia and the Near East.

"The era of large scale USAID bilateral irrigation and water projects is ending. In the future USAID will address water issues through a range of environmental, policy and sector programmes," writes the Irrigation Support Project for Asia and the Near East in *Water*, a new quarterly newsletter published for the Asia Bureau and Near East Bureau of USAID.

Unsustainable use and management and growing competition for water resources are the two key issues on which USAID is developing applied studies and lessons learned papers, which will provide the foundation for water resources strategies for the two regions.

The irrigation and water management systems in many countries represent a tremendous investment in equipment, but also in the participation of people using water resources. Seven of the countries where USAID works have large scale irrigation systems that are deteriorating. The systems irrigate from 15% to 75% of the cropped land in these countries. Maintaining the physical structures and the productivity of the systems is probably beyond the resources of most countries.

USAID calls for new partnerships that foster management and responsibility and even ownership of the water systems by their users. "Water is still considered a free good in most countries and therefore its use is not determined by market forces. Proper valuation of water should contribute significantly to its conservation. As scarcities arise, there will be more frequent conflicts over water distribution requiring hard decisions by governments," USAID warns.

For copies of *Water* or more information contact:
 Kathy Alison
 ISPLAN
 1611 N. Kent St. Room 1001
 Arlington, Virginia 22209, USA
 Fax: 1+ (793) 525-9137

WATER AND SANITATION TRAINING PACKAGE

The focus of UNICEF-supported water and sanitation programmes has changed significantly over the last decade. The changes reflect a move away from solutions using conventional engineering towards solutions based on a participatory approach aimed at improved sustainability.

The change in focus coincides with new demands by donors, which encouraged a reorientation of the sector to focus more on maximizing health and socio-economic benefits. In response to these changes, UNICEF New York has developed a training package.

It consists of eight modules which cover capacity building; integration of water, sanitation and hygiene education; technical options; community management; improved inter-sectorial linkages; hygiene education; sanitation, and mobilizing support. The training will be conducted via regional workshops of six days duration.

For more information contact:

UNICEF
3 UN Plaza
New York, NY 10017, USA
Tel: 1+212-326-7122/Fax: 1+212-326-7438

FROM SANITATION TO DEVELOPMENT

The Baldia Soakpit Pilot Project was carried out in Baldia, a low-income area in Karachi, Pakistan, between 1979 and 1986. It is an example of a process through which local communities were able to improve their environmental sanitation conditions and make this a starting point for a much broader development. Although the project has been mentioned in a number of books and articles, it has never been fully documented.

From Sanitation to Development: The case of the Baldia soakpit pilot project, recently published by IRC, describes the community-based sanitation approach used in the project. The emphasis in the book is on the process through which the local communities, and especially women, became involved and motivated for sanitation and how this involvement led to the initiation of wider development efforts supported by the project.

A detailed analysis is given of the three main project components: on-site sanitation, home schools and primary health care and covers such aspects as social organization and management, technical designs, physical output, costs, training and sustainability of the activities. The same community-based model was used for all components: demand-oriented and maximizing inputs of the community, not only in financial terms but also in planning and implementation. An overview is included on the impact of the project at national, municipal and community level and examples are given of other projects which incorporated components of the Baldia project. The final chapter summarizes the key issues and discusses the lessons which can be learned from the experience.

The initiative to write this book came from the community organizer who had been involved in the project from beginning to end, because she realized that the experiences of the project would be applicable in other cities with similar conditions. Documentation was realized through financial support from the Dutch Government and with technical assistance from IRC.

To prepare the publication, a team was formed consisting of the community organizer and a staff member from IRC who had worked in the area previous to the project. This team decided that the document should not only cover the approach and activities of the project from 1979 to 1986, but also include an assessment of the situation in 1990, so that the sustainability and impact of the project could be analyzed. For this purpose the team visited the project area in December 1990 carrying out observations and holding discussions with men and women at all levels, including beneficiaries, masons, community leaders and staff of local government organizations and NGOs who had been involved in the project or worked in a similar environment.

Among the overall achievements found are:

1. The project was able to motivate people to improve their sanitation facilities, which was not considered a priority at the start of the project.
2. The technology of the latrines was adapted to local conditions as a result of cooperation between technical staff, masons and sanitation committees.
3. At the end of the project a total of 1146 latrines were constructed with subsidy and 3721 latrines with only technical assistance. For every dollar spent by the project, the community spent almost three dollars.
4. The high level of women's participation: they supervised construction of latrines in their houses and became motivators in their areas. The lack of education opportunities especially for girls was countered by establishment of home schools in the houses of young girls who had an education of at least five years. At the end of the project, 64 schools were functioning with an estimated number of 1700 pupils.
5. As a result of the project, the organizations involved became confident in their ability to organize the community for development-oriented activities. They also became aware that if they could organize their community to contribute and participate in a new initiative, it would be possible to approach outside organizations, government or non-government, for funding or other assistance. These efforts of the organizations are still on-going.

From Sanitation to Development: The case of the Baldia soakpit pilot project by Quratul Ain Bakhteari and Madeleen Wegelin-Schuringa. IRC International Water and Sanitation Centre (TP Series: no. 31) ISBN 90-6687-021-4 can be ordered from IRC.

NEW PUBLICATIONS

THE LAST OASIS: Facing Water Scarcity, by Sandra Postel, Worldwatch Institute. 240 pp. ISBN 1-85383-148-4 £ 9.95

Ms. Postel examines the economic, ecological and political factors affecting fresh water supply. She shows how badly

it has been managed and analyzes the dangers of confrontation between nations and between rural and urban users. She shows that the technology for effective water husbandry does exist, and demand could be cut without sacrificing productivity or quality of life. The priority is a recognition of the gravity of the problem and the need for institutions to achieve the sustainable use of water.

The Last Oasis is the third in the Worldwatch Environmental Alert series of comprehensive general books on the major environmental challenges facing the world produced by the Worldwatch Institute in Washington.

For further information please contact:

Lisa Day
Earthscan Publications Ltd.
120 Pentonville Road
London, UK N1 9JN
Telephone 44+ 71-278-0433/Fax 44+ 71-278-1142

Hydraulic Ram Pumps: A Guide to ram pump water supply systems by T.D. Jeffery, T.H. Thomas, A.V. Smith, P.B. Glover and P.D. Fountain. Intermediate Technology Publications, 144pp. ISBN no. 1-85339-172-7. £12.50.

In recent years there has been a revival of interest in the hydraulic ram pump, an renewable energy water-lifting device.

The book aims to introduce the reader to all aspects of the use of ram pumps. It should be particularly useful to technicians and engineers involved in rural water supply, whether they are assessing the suitability of ram pumps, installing a system or contemplating local manufacture. It gives practical guidelines for the installation and operation of water supply systems based on such pumps, as well as describing the operation of the pump and the factors affecting its performance.

The well-illustrated book uses simple text to describe steps involved in designing and installing a complete system, steps which are applicable to any model of ramp pump available. Details of one pump designed for local manufacture in developing countries are given, as well as note on ram pump design for those wishing to develop their own models.

More information can be obtained from:

IT Publications Ltd, Unit 25
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United Kingdom
SP7 8PL

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UPCOMING EVENTS

STOCKHOLM WATER SYMPOSIUM 1993,

10-14 August 1993, Stockholm, Sweden

"A Cross-Sectoral Approach to Water Quality

Management: Integrated Measures to Overcome Barriers to Minimizing Harmful Fluxes from Land to Water" will be the theme of this year's Stockholm Water Symposium. The objective of the symposium is to address a subset of these different barriers, identifying both similarities and differences between regions of the world. The subset of barriers selected consists of those arising from a lack of economic arguments for minimizing harmful pollutant fluxes, barriers related to inadequate financing, and barriers to effective communication between scientists and decision makers. The programme includes overviews and highlights on water quality management, seminars on water systems focusing on barriers and trying to achieve water quality goals, workshops on overcoming barriers, lectures and general discussions.

Information can be obtained from:

Symposium Secretariat, Stockholm Water Symposium 1993
c/o Stockholm Convention Bureau
PO Box 6911, S-102 39 Stockholm, Sweden,
Telephone +46 8 23 09 90/Fax: +46 8 34 84 41

INTERNATIONAL SYMPOSIUM ON HAZARDOUS WASTE MANAGEMENT IN ECONOMICALLY DEVELOPING COUNTRIES,

24-26 June 1993, Istanbul, Turkey

This symposium's themes include, among others, simple technology for hazardous waste management and disposal; sanitary landfilling and hazardous wastes; management of special wastes; environmental ethics; economy and legislation related to hazardous wastes; and health problems caused by the improper management of hazardous wastes. The symposium will be preceded and followed by intensive courses:

Intensive Course on Sanitary Landfill (21-23 June) will cover, among others, criteria for site selection, solid waste disposal, compaction and covering, observation wells and sampling technology, and environmental impact and risk assessment of sanitary landfill.

Intensive Course on Appropriate Technology for Hazardous Waste Management in Economically Developing Countries (28-30 June) will deal with, among others, concept of hazardous waste, waste recycling and minimization in industry, clean technologies, in-house storage, collection and transportation, and pretreatment.

Information can be obtained from:

The Turkish National Committee on Solid Wastes
Attn: Prof.Dr. Kriton Curi, Bogaziçi University
80815 Bebek, Istanbul, Turkey
Telephone: 90+ 1 263 15 00/Fax 90+ 1 265 84 88