

WATER NEWSLETTER

Developments in water, sanitation and environment

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NUMBER 239, DECEMBER 1995

Latrine Revolution in China's Henan Province

In most of China there are limited financial and staff resources, and a lack of clear action plans for sanitation programmes. An outstanding exception is Henan Province, which in 1989 launched a "Latrine Revolution" campaign throughout the province with strong commitment and full support of the provincial governor. From 1990 to 1993 resources were mobilized and reallocated, not only from the Health Bureaus, but also from all other related agencies. Of the ten counties in China that are most advanced in improved latrine coverage, nine are in Henan Province. Of the 27 medium counties, 10 are in Henan.

Henan Province in central China has a population of 90 million, and in 1987 it was the most densely populated area of the country. It is an important agricultural producer; wheat, maize, cotton and apples are the main crops. Income per capita is not very high - about 900 yuan per year.

Improvement of latrines started in 1987 in a few villages in Yucheng county because of the efforts of "Mister Latrine", the physician Dr. Song Lexin. Going from village to village on his bicycle, he would discuss the benefits of his latrine with the villagers. After the villagers he visited experimented with a demonstration latrine, they gradually saw that the manure from this latrine made their apples grow larger and taste sweeter. They are convinced that their village has become richer because of the improved latrine. They are also well aware of the health benefits. Most of the latrines are still kept very clean by the women, even after eight years.

Nearly five million latrines

A 1988 health survey in Henan revealed that intestinal infectious diseases were prevalent. The health authorities decided to give prevention and control of these diseases priority, and the provincial Patriotic Health Campaign Committee (PHCC) urgently sought commitment from leaders for latrine improvement.

The Henan Province latrine improvement campaign began in Yucheng county in late 1989, and provides the case for a

bottom-up approach. From 1989 to 1994 the population with improved latrines in rural areas increased from 1% to just over 29%. At the end of 1994, nearly five million households were using the double-urn funnel-shaped latrine. A striking fact is that this programme has been run completely on local resources and using only the existing party and government structures. As such Henan stands out from experiences elsewhere.

In the first year of the promotional campaign all levels of government had produced concrete programmes, raised funds and mobilized the villages. In 1991, 1 million peasant families built a new latrine or improved an existing one. In 1992 an additional 1.1 million units were built or improved. In 1993 the rural area latrine improvement was made the focal point of the province's Patriotic Health Campaign.

Confusion around the central government's instruction to avoid burdening peasants caused activities to cease in May 1993, because some counties saw promotion of latrine building as a burden. In the interest of achieving the goal of Health for All by 2000, however, it was agreed that the improvement of latrines should not be cancelled, but rather strengthened. At a nation-wide meeting to exchange improved latrine experiences in September 1993, positive words on the Henan experience from Minister Chen Minzhang (Minister of Health) gave the programme a boost, and another 930,000 latrines were constructed in the latter part of the year. According to provisional figures, another 1.1 million households improved their latrine in 1994, bringing the total to 4,982,813, or 29.22% (PHCC Henan 1994).

At the beginning of 1995 the Vice Governor of Henan Province, Mr. Li Zhi Bin, announced that a new promotion campaign on improved latrines will continue until 2000, with higher targets set for all levels, than in the earlier campaign.

After five years of the programme users in households which have an improved double-urn latrine, identified clear

benefits. In general, women mentioned 'no smell' and 'no flies'. Men identified 'better manure' as benefit number one, leading to higher crop production and higher income.

What made the Henan experience work?

The lessons learned from the programme can be summarized as follows.

1. *Get the policy right.* Clear national policies permitted action plans with targets at the provincial level.
2. *Get the design right.* It is technically adequate, affordable and acceptable to the farmers; local materials are available.
3. *Get high-level commitment for improved latrine promotion.* Commitment to the programme from leaders at all levels has been essential.
4. *The beneficiaries pay most of the costs of improved sanitation.* In most cases the communities pay 90% of the total costs for their improved latrines themselves.
5. *Focus strongly on promotion at all levels, making use of the clear economic, convenience and health benefits.*
6. *Ensure proper organization using the existing structures,* right at the village level, and involve all possible allies.
7. *Latrine promotion takes a lot of time and constant attention.*

Communication, mass media and monitoring

Although from the construction side the Henan Province latrine improvement work can be called a success, a number of problems still have to be overcome. As a result of insufficient maintenance, ineffective use of the latrines, and lack of hygiene education, only half of the improved latrines were found to be sanitary in a 1993 nation-wide sanitation survey. The lack of a communication strategy to create demand, insufficient use of mass media and insufficient monitoring of effective use are other weaknesses which must be remedied. In villages in which preparatory meetings and training on improved latrine construction had taken place, but where construction had not started, most of the women were not aware of the programme.

The major challenge ahead for Henan Province is to develop a revolving fund and other credit options to spread the latrine improvement to the poorer villages in the province.

UNICEF China requested the IRC International Water and Sanitation Centre to document the experience in Henan Province. The aim of the mission, which took place in January 1995, was to learn from experiences in Henan Province and to build upon them in expanding UNICEF cooperation on promotion of latrines.

North-South Collaboration in Bamenda, Cameroon

When an alderman of the city of Dordrecht's Urban Council met the mayor of Bamenda, Cameroon at a meeting on urban management in Florence in 1993, neither suspected that such productive collaboration would ensue. The mayor requested support from Dordrecht for a bridge connecting two parts of the town, and for solving the flooding problem.

Inadequate Waste Management

The city of Dordrecht approached IRC for specific information on solid waste and drainage, and in August 1993 IRC visited Bamenda to gain additional insights into the local situation. Main problems were related to drainage caused by inadequate waste management, which in turn led to flooding in the downstream areas of the town. The town did not have the means to dump collected waste into a landfill, and as construction encroached on the natural drainage channels and flood plains downstream of the town, serious flooding became more frequent due to reduced drainage capacity during the monsoon period.

IRC's report motivated the city of Dordrecht to provide further support, concentrating initially on infrastructural improvements. In the meantime information was collected on options for decentralized composting.

Awareness Raising

The heads of Dordrecht's Public Works Department and the Municipal Solid Waste Services travelled to Bamenda in January 1994. With support of Bamenda municipal staff key issues were determined. The mayor understood the importance of raising awareness on solid waste management at all levels, and through the local radio station, daily updates were given on the activities. Meetings were held with all Fons (chiefs and paramount chiefs of the local tribes) several formal leaders, professionals and the public. At the end of the visit the market women readily recognized the members of the mission and freely gave their suggestions on possible improvements. The public debriefing session before the Council of Bamenda was partly screened on national television.

In 1994 Dordrecht provided direct inputs through training of municipal staff and in 1995 provided a waste collection/compactor truck and 28 waste containers, as well as high-pressure pumps for cleaning out culverts and drains. Two Dordrecht officers went to Bamenda to train a local crew to handle the new equipment and work out a waste collection schedule.

To keep up the project's momentum, it was agreed that five graduate students from the University of Wageningen in the Netherlands would further study the waste management issues, particularly public health, socio-economic issues and the potential of decentralized composting. The students used every opportunity to raise awareness among the public and the officials about their work and the solid waste management issue. The success of these efforts are evident in the town, and can also be noted by the formal invitation from the chairman of the Bamenda Urban Council, to manage waste disposal properly. He stated that "adequate waste disposal begins in the family, a quarter, then the community" ..., "do not wait and look up only to the council".

The strength of the collaboration between Dordrecht and Bamenda motivated the Netherlands Council of Municipalities to support the financing of the La Chance Bridge in September of this year, and support for another bridge in the near future is likely. These bridges will remove the two most important physical constraints to drainage in the town. The collaboration between Bamenda and Dordrecht is still expanding and will soon include educational and cultural exchanges.

Model Case

In its October 1994 seminar on Municipal Solid Waste Management in Developing Countries, the Netherlands Council of Municipalities discussed Bamenda and has since begun to present the Dordrecht-Bamenda liaison as a model case study for collaboration growing from small, concrete steps. This is in contrast to earlier projects which were often based on time-consuming master plans and significant financial support, thus leading to long, drawn-out project implementation.



News from the Collaborative Council

Global Forum in Barbados

People and Water, Partners for Life was the theme of the Council's five-day conference in Bridgetown, Barbados. This third Global Forum, hosted by the Government of Barbados, brought together over 200 specialists in water and sanitation from some 70 developing countries, 6 Eastern and Central European Countries and 39 external support agencies. The conference transmitted a powerful statement to the Habitat II Conference to be held in June 1996 in Istanbul. The Council urges delegates at Habitat II to learn the lessons of the past and put people's needs and ideas first in planning and development programmes.

Strong political commitment is needed, the Council says, adding that with that commitment, "the guidelines, tools and technical support can be found to implement improvement programmes which will bring lasting benefits". If effective and sustainable improvements in the lot of the urban and rural poor are to be achieved, governments need to strike *partnerships* with water consumers, landowners, the private sector, non-governmental organizations and service providers (water utilities, vendors). Substantially increased investment in sewerage, wastewater treatment and water pollution control is urgently needed to restore and protect the quality of surface water and groundwater on which the residents of rapidly expanding cities depend. Mobilizing and assisting low-income urban communities to obtain and use hygienic sanitation facilities needs to be a high priority in settlement planning, the Collaborative Council argues.

The 200 experts left Barbados having set their multinational Working Groups and Task Forces to work on a total of 14 critical issues to help achieve successful programmes to bring water and sanitation improvements to the poorest of the poor. The topics range from community management and partnerships with civil society to water demand management and conservation, and from the problems of small island developing states to a special programme for Africa.

Meanwhile, the Council says that renewed political commitments in Istanbul could help to satisfy the basic needs of hundreds of millions of people, thereby alleviating a water crisis which threatens to hinder economic, social and environmental progress in a growing number of water-short countries.

The Water Supply and Sanitation Collaborative Council is open to sector professionals from national water supply and sanitation agencies in developing countries, multilateral and bilateral aid agencies, non-governmental organizations and appropriate professional, research, information and training organizations active in the field of drinking water supply and sanitation. The Council meets at two-year intervals to provide a forum for members to exchange experiences and views and to agree on common approaches for advancing progress in water supply and sanitation.

Between the global fora, specialist Working Groups and Task Forces develop proposals for improving the sector's performance at national and international level in key issue areas. The areas of concern and interest which would receive such attention in the immediate biennium are: country-level collaboration and national sector strategies; water demand management and conservation; community

management and partnerships with civil society; promotion of sanitation; services for the urban poor; operation and maintenance; the Global Applied Research Network (GARNET); institutional and management options including decentralization; human resources development; training and education; advocacy and dissemination strategies including a home page on water supply and sanitation in Internet; emergency measures for water supply and sanitation; issues of small island states, water supply and sanitation development in Africa; the Lusophone Initiative; and issues of Central and Eastern Europe and the Commonwealth of Independent States.

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New Publications



Hygiene Education in Zambia, Jean Rogers Ryan.
UNICEF, New York, N.Y. USA (1995) ISBN:
92-806-3197-7, 67 pp.

This book is the second in a series on hygiene education published by UNICEF. The series is a result of an agreement between UNICEF and WHO to work towards a joint strategy for hygiene education in water supply and sanitation programmes for the 1990s. A major focus of the plan was the preparation and analysis of several country-wide case studies of hygiene education and programming. Zambia was selected as a direct result of the severe drought which devastated much of Southern Africa during 1991 and 1992. The question addressed was whether the emergency drought situation stimulated a greater, or perhaps different type of hygiene education effort than might normally have been put into effect. The survey was conducted over a period of four weeks and consisted of interviews, observations, field trips and review of pertinent documentation. Items covered are socio-economic context; water, sanitation and hygiene education; hygiene education in the education sector; training, capacity building and hygiene education materials development; emergency situations; hygiene education activities; model HE activities; an in-depth review; and analysis and recommendations. The publication is available for US\$9.95 for OECD countries/\$4.95 for developing countries from: UNICEF Programme Publications
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New York, NY 10017
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Upcoming Events

3rd International Slow Sand/Advanced Biological Filtration Conference. Imperial College, London, UK,
22-24 April 1996

The conference is organized by the Imperial College of Science, Technology and Medicine, and sponsored by the organizer, the University of New Hampshire, Thames Water Utilities, Amsterdam Water Supply, IWSA, AWWA Research Foundation, IRC and IWEM. Proposed topics include comparisons between slow- and fast-rate biofiltration, process application and modifications, removal mechanisms/modelling; pretreatment applications; cleaning, operation and economics; and research needs. For more information contact:

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8th International Conference on Rainwater Catchment Systems. Teheran, Iran, 21-25 April 1997

The conference, organized by the Ministry of Jihad-e-Sazandegi, will have the theme 'Rainwater Catchment for Survival'. Main topics associated with rainwater catchment systems utilization in arid and semi-arid areas will include technology; management; environmental aspects; socio-economic aspects; progress and innovations; training and innovative extension; and religious and cultural aspects. There will be plenary sessions and opportunities for poster presentation, workshops, exhibitions and group discussions. The official languages will be English and Persian.

Papers are invited under the full range of issues involved in rainwater catchment systems utilization. Abstracts not to exceed 300 words must be submitted before 15 March 1996. For more information on papers and registration contact:

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NUMBER 240, FEBRUARY 1996

World Water Day 1996: Water for Thirsty Cities

The third annual World Water Day will be celebrated on March 22. This year's theme, "Water for Thirsty Cities" emphasizes the growing water crisis faced by cities across the world which threatens the sustainability of their social and economic development. It also underscores the urgent need for a more comprehensive approach to urban water resources management that could meet, efficiently and equitably, the current water needs of the world's fast growing cities without compromising the ability of future generations to manage their water needs. World Water Day 1996 is expected to send a strong message to the forthcoming "City Summit", the Second United Nations Conference on Human Settlements (Habitat II), due to be held in Istanbul in June.

Key Issues

Five key issues highlight the challenges faced by 'thirsty cities' and how these can be met.

Water is for all, for the city of the poor and the city of the rich; for health and for economic development. How to balance the competing demands and address the needs of all, particularly the urban poor who are the most vulnerable?

What is the cost of a bucket of water? As the cities expand and their demand increases, water has to come from ever more distant fresh water sources. How can the cities meet the rising cost of supplying water?

Cities can stop the wastage of water. Nearly half of the water supplied to cities is lost today because of leakage and wastage, often the result of neglect and profligacy. Reducing this wastage could free up enough water to reach the unserved.

Building partnerships for water can mobilize the vast and largely untapped resources of communities, NGOs and the private sector in all areas of urban water management, enhancing efficiency and accountability in the supply, use and protection of water.

Saving water for the future is not striving for a distant and uncertain goal; the current trends of depletion, pollution and degradation of urban water resources have reached alarming proportions and could affect sustainable supplies within the foreseeable future if the current trends are not reversed.

Awareness creation campaigns at country level for World Water Day 1996 could be developed around these five key issues, among others.

Preparations for World Water Day 1996

The emphasis of World Water Day preparations and observances, as established by the United Nations General Assembly, should be at the country level. The initiatives for developing awareness creation campaigns at the country level are expected to come not only from the principal actors in the water scene, such as national and local governments and service providers, but also from a wide range of stakeholders such as non-governmental organizations active in the water sector, educational institutions, local associations, etc.

All United Nations agencies and organizations and other external support agencies are expected to act as facilitators, stimulating, guiding and supporting country-level initiatives. UNCHS (Habitat), as the designated lead agency within the United Nations System for World Water Day 1996, is committed to working together with all of its sister agencies supporting national initiatives.

Country-level activities

The preparatory process at the country level provides a good opportunity to create awareness on urban water issues, problems and possibilities that could be sustained long after World Water Day is observed on 22 March. This will, however, require careful targeting of the campaign and an innovative rather than a "business as usual" approach. Some possible country-level activities could be as follows:

- Introducing water issues in school curricula
- Organizing essay competitions in schools
- Innovative photo competitions focusing e.g. on common bad practices such as water wastage, water pollution, etc.
- Dissemination of "best practice" on urban water management
- Radio/TV talk shows/panel discussions/interviews
- Popular theatre
- Field campaigns such as river clean-up, anti-litter campaigns

International Observance of World Water Day in China

Between 18 and 22 March UNCHS and UNEP will sponsor the Beijing Water Conference for Cities and Towns and other related World Water Day events. The conference will seek to bring the key actors and stakeholders in the urban water scene to exchange information and ideas on how the cities and towns can meet the soaring demands for water in the twenty-first century in a sustainable and equitable manner. A special focus of the conference will be the sharing and exchange of successful practices in fresh water and waste water management in large cities. The selected best practices presented at the conference will be disseminated through multi-media channels at the Habitat II Conference in Istanbul.

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Community Exchange Visits in Nepal: Learning and Sharing

Exchange visits between four villages in Nepal provided new insights into the way they manage their water supplies. Rangapur, Gajedi, Lele and Yampaphant are all involved in the participatory action research (PAR) project *The Role of Communities in the Management of Improved Rural Water Supplies* being implemented by NEWAH (Nepal Water and Health) and IRC. The project began in 1994 and is currently being carried out with partner organizations in six countries, so as to assist communities and agencies to assess and enhance self-reliant management of their water supply systems (see "Village Walk: Start of Joint Problem Identification" in *Water Newsletter* no. 235, September 1995).

Soon after the villagers of Rangapur arrived for their two-day visit to Gajedi, a village a few hour's drive away, they were given a general introduction to the water supply and sanitation system, and set off on an evening walk to acquaint themselves with Gajedi. The next morning the work began. Together with three water committee members and a member of the PAR team from NEWAH, they visited all of the village standposts and talked with the users. During the course of the day they also visited families and discussed their responsibilities towards the drinking water system. Interested in all facets of the host community and not just the water system, the visitors from Rangapur also noticed a plough that was different from the one in their own community. All sorts of questions arose concerning its fabrication, functioning, price and durability. Time was taken to show how the plough worked, and it was agreed that a sample plough would be sent to Rangapur.

The villagers of Gajedi had done their best to improve the village's appearance - the road had been repaired, and the tapstands and drainage areas had all been cleaned. Nevertheless, the guest team found several things that could benefit from improvement. That evening the team made a presentation of their observations to the host team and some of the other villagers. Observations included maintenance problems (including task overload for the caretaker), water quality problems, hygiene problems related to free-running cattle, and lack of awareness in one of the tribal communities. The visitors concluded their observations by applauding their host community's enthusiasm for communal activities. The host team then had an opportunity to respond to the guest team, and the committee chairman assured the visitors that the community would do their best to solve the problems cited.

The Gajedi group, consisting of five men and three women, visited Rangapur shortly thereafter. The visit began with an introduction session and highlights of the local drinking water situation. This was followed by an observation walk around the project area and inspection of each handpump. Despite a language barrier, lively discussions were held between the women from the two villages, and a woman health volunteer from Rangapur shared her experiences with a community health volunteer/project committee member from Gajedi. That afternoon and evening were spent walking through the village and making observations. It was very difficult for the Gajedi group to spend two nights in Rangapur, as there was not a single toilet in the entire ward where they stayed. Having to use the open fields or riverside was very difficult, particularly for the three women.

When the time came for the visitors to present their observations, nearly 60 people gathered to hear what they

had to say. Observations included maintenance problems, funding of maintenance, a lack of toilets, drainage problems and the lack of regularity of village development committee (VDC) meetings. Compliments were given on the houses and settlements, the educational level of the villagers, and the planned project monitoring by NEWAH. The guests were thanked for their valuable suggestions and comments, and in his concluding remarks, the chairman of the VDC thanked the community and committee members for their valuable participation in the exchange tour programme.

The visits between the communities of Lele and Yampaphant were of a similar nature. Interesting was to note that in this exchange new problems were identified in both communities which had been overlooked in earlier problem identification efforts. One example is discrimination in water use - Brahmins did not allow people of lower castes to fetch water from the same source as they did.

These exchange visits were part of a series of activities undertaken by the Nepali PAR team. Prior to these they had conducted village meetings in the four selected communities where the PAR project was to be implemented. Then, in a two-day workshop, they trained members of the villages to become village facilitators for the PAR. The PAR team, together with the trained village members, conducted a community diagnosis, making use of resource mapping, observation, focus group discussions, and other techniques. To intensify the problem diagnosis and to get acquainted with the community and its problems and potentials, the exchange visits between the villages were organized as a sharing and learning experience for all involved. As such, the exchanges turned out to be very effective, and additional visits are planned during the research process. The outcomes of the different activities undertaken in the villages will be discussed in village meetings in order to be able to plan for the next project step, where improved problem solving strategies at community level will be tested.

For more detailed information on the participatory action research experiences or addresses of local partners, please contact Mr. Marc Lammerink at IRC.

First National Sector Conference in Sri Lanka

To improve coordination for increased water supply and sanitation Sri Lanka held a first national conference in December 1995. The Government has committed itself to providing adequate water and sanitation services to all by 2010. According to 1994 figures, 50 percent of the rural

population has access to safe water and 67 percent to adequate sanitation facilities.

"A recent study undertaken with assistance of UNDP has revealed that responsibilities within the water supply and sanitation sector in Sri Lanka are vested with a multitude of agencies often with similar or overlapping implementation responsibilities," Mr Nimal Siripala de Silva, Minister of Housing, Construction and Public Utilities, said in his address to the conference.

The study concluded that a well-coordinated sector with unified policies and a clearly defined development programme is a pre-requisite for the achievement of the new sector targets. Hence a National Sector Coordination Programme for Water Supply and Sanitation was initiated in 1995 and will be concluded in 1997 with a comprehensive sector development plan. This first national conference aimed to contribute to better understanding of national water and sanitation issues leading to improved coordination among sector agencies, prioritization of sector investment, and agreement on sector policies.

Four sub-sector committees (Metropolitan Colombo; Other Towns; Rural, Peri-Urban and Rural Towns; and Plantation Areas) submitted position papers to the conference. A few highlights from those include:

- Although the Greater Colombo area is the best served area in the country, more than 100 dissatisfied water consumers submit complaints each day to the water company. High water bills, muddy water, and low pressure are among the common complaints. Water leakage and the old distribution system are the major causes.
- Unaccounted-for water in the Greater Colombo area is assessed to be between 45 and 55 percent. Reduction to 30 percent is possible but will incur high costs.
- Since the available funding for rural water supply and sanitation is limited, priority will have to be given to deserving communities and must correspond with social and economic needs.

The various reports call for formulation of uniform policies for: investments cost and sharing between actors, cost recovery of operation and maintenance, monitoring and back-up support for completed facilities, community management, and selection criteria.

On the occasion of this first national sector seminar newspapers in Colombo carried special messages on the

importance of water supply and sanitation from the President and the Prime Minister of Sri Lanka, as well as from the Minister of Housing and the Minister of Health.



Basic Libraries on Health



TALC (Teaching-aids at Low Cost), a UK-based non-profit organization, has compiled five sets of standard libraries for hospitals and district health centres. Aside from an up-to-date range of medical and health books, the libraries also include samples of free newsletters.

For district hospitals a package of 17 books has been compiled ranging from two on primary surgery, to an AIDS handbook and the latest book on tuberculosis (£94 including surface mail).

A package for district health workers contains 14 books and a selection of accessories. Titles include *Where There is No Doctor*, *a Book for Midwives*, and *Helping Health Workers Learn* (£80 including surface mail).

For village and community workers there is a package of six publications including the *Nutrition Handbook for Community Workers* and *Children for Health* (£32 including surface mail).

A fourth package is intended for medical students going on an elective and contains five books and two booklets plus accessories (£17 including postage in the UK).

Finally, there is package on drug supply and management containing 11 books, training materials and guidelines. Titles include the *WHO Model List of Essential Drugs* and *AHRTAG's How to Manage a Health Centre Store*. (£47 including surface mail).

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Upcoming Events

International Conference on Improvement of Water Quality for Human Consumption, Cali, Colombia,
30 April - 4 May, 1996

This conference, offered by CINARA, IHE and IRC in collaboration with the University of Surrey, England, offers an opportunity to gather information on national and international policies in the water supply and sanitation sector. It offers a view of experiences and perspectives on the development of water quality improvement techniques in developing countries, as well as of the investigation and advancement in different treatment techniques in developing countries. Excursions will include visits to construction sites, enabling the participants to profit from integrated activities to exchange experiences and interests.

The conference is directed to professionals that work with planning, design and O&M of systems that improve water quality for human consumption, and for professionals, trainers and investigators in the technical and social areas related to water supply and the improvement of water quality for human consumption.

The official language of the conference is Spanish. Conference fee is US\$375, US\$330 for those registering prior to 1 March 1996. For additional information please contact:

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Water Policy: Allocation and Management in Practice,
Cranfield University, Silsoe, Bedford, UK.
23-24 September 1996

The conference aims to provide a forum for the exchange of current experience in water policy implementation, and to examine, in light of principles and concepts developed over the past decade, successes and failures in the practical implementation of integrated water policy. Main topics include water resource management strategy; water environment protection; institutional/social aspects; water allocation; water economics; water demand and technology; political and legal issues; and water management.

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WATER NEWSLETTER

Developments in water, sanitation and environment

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NUMBER 241, MAY 1996

This issue of the Water Newsletter focuses on resource centres and capacity building. Directors and staff of three resource centres in Africa and Latin America have contributed articles about the development of their centres, the challenges they face or have faced, successes and and their vision of further development.

African Resource Centres for Water and Sanitation

Resource centres for information dissemination, expert advice, training and research are rarely found in Africa and where they do exist, they usually are attached to a government ministry and therefore have limited horizons both in terms of scope and impact.

The International Drinking Water Supply and Sanitation Decade of the 1980s clearly recognized the importance of capacity building as a priority if progress is to be made in developing countries. The development of the UNDP - World Bank initiative for capacity building in water and sanitation in the early 1980s focused on the creation of centres of excellence to form an International Training Network for Water Supply and Waste Management. The intention was to develop many of these centres around the world but this was not wholly successful. However, in Africa four centres were established in collaboration between the World Bank and a variety of bilateral agencies.

The Experience of IWSD

The Institute of Water and Sanitation Development (IWSD) in Harare was one of these ITN centres. It was established as a UNDP - World Bank Water and Sanitation Program project in 1989 at the University of Zimbabwe. In response to the high demand for its services the IWSD made a rapid transition from an international project to a local non-government organization in 1994.

The IWSD has worked very closely with the government of Zimbabwe from the outset and has increased its regional support gradually over the last six years. In order to develop as a sustainable organization and to address the needs of the sector in a demand-driven way, IWSD has set out on a path to commercialization. In 1995 less than 10% of the turnover could be classed as donor funds and virtually all activities were carried out on a payment for services basis. This raises

the difficulty of on the one hand trying to be seen as a support agency whilst on the other hand charging for services in a commercial way.

Are Service Ethics and Commercial Principles Compatible?

Two difficulties which arise from attempts to combine a support or service ethic with commercial principles of operation are:

- *distrust of the organization* by related agencies which may be seen as after money rather than genuinely providing a social service. This may partly be overcome by operating as a non-profit organization, having an open management structure with a management board representing the wide variety of client groups, and also by paying attention to the second difficulty;
- *maintaining a balance between commercial and non-commercial services.* The management of the resource centre must carry out the difficult task of balancing between the provision of services which do not usually earn money (such as information services, and advisory services such as committee membership and participation in meetings), with time spent on commercial services (such as providing training and consultancy support). In the effort to become truly a resource centre the organization must find ways of financing activities such as research, information and advisory services - either from specific programme agreements with donors or from cross subsidies from commercial activities.

It is unlikely that governments in Africa will subsidize resource centres from the national fiscus or from water levies, as happens in Europe (e.g. IRC), and therefore they must become fully self sustaining in order to survive. The very high demand for services and the success of the four

centres in Africa testify to the usefulness of such resource centres but a question on how to establish new ones is not easy to answer.

How to Develop and Support Resource Centres

The development of independent resource centres can be difficult in parts of Africa where they may be viewed with suspicion as being opposed to government or self serving. The most difficult question is where to place the resource centre. Difficulties may arise if located within government due to interministerial rivalry, and limited mandates of ministries. This may explain in part why the intention of UNDP - World Bank to establish many more ITN centres was not so successful. Those that have been developed and have been successful are mainly in Africa and are all separate from government, being initially located in an NGO or educational institutions. Now three of the four in Africa have followed the route of forming their own non-government organization.

Resource centres initially require support in the development of the modus operandi, the management structure and a reputable programme of work, but if correctly placed they should be able to become self sustaining in only a few years. This is not to say that bilateral support is unnecessary. Bilateral support agencies may find that the resource centres are useful and reliable routes to achieve some sector objectives, while the resource centres will be developing specific research and information programmes which are well suited to bilateral support.

Making Networks Work

The establishment of the ITN programme by UNDP - World Bank did not automatically result in the creation of a functional network. In order for a network to function the members have to feel some benefit from the network whether this is from shared information, opportunities for collaborative programmes to enhance capacity, access to additional funds, or collective image building. The ITN centres in Africa only met annually as managers from 1989 to 1994. The main reason for these meetings was to share ideas on how to manage and develop the centres.

Only since the centres have become stronger has it become possible to envisage a more vibrant network. In 1995 the centres collaborated on a programme funded by UNEP and later that year they hosted a joint conference under the banner of the ITN. Thus in 1995 for the first time they began to operate as a network in a full collaborative sense. The outputs and implementation of resolutions from the ITN conference are likely to see African resource centres

taking a lead role in sector debate in the future rather than leaving this solely to the initiative of external agencies.

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Development of NETWAS as a Resource Centre

Network for Water and Sanitation International (NETWAS) is one of the oldest ITN Centres. It was established in 1986 through the initiative of the UNDP/World Bank Water and Sanitation Program and several donors, the main one being the Swiss Development Cooperation (SDC). NETWAS was hosted by AMREF for eight years until it became an independent NGO in 1995. NETWAS' area of concentration covers Kenya, Uganda, Tanzania, Ethiopia, Sudan and Eritrea.

The Early Years

NETWAS commenced its operations in the early years with the primary aim of promoting the use of appropriate technologies both in field projects and at the training institution level. This was initially accomplished through training workshops/seminars, information dissemination through the establishment of a documentation centre, advisory services and implementation of selective demonstration projects. NETWAS established partnerships with key water and sanitation institutions in the above mentioned countries including ministries of water and health, universities and middle-level training colleges, NGOs and sector donors. In addition, partnerships were established with international organizations from the developed countries which provided a resource/facilitation base to NETWAS. These include IRC, SANDEC (formerly IRCWD), SKAT and others. Continued contacts with other ITN Centres in Africa provided an additional impetus to NETWAS' development philosophy.

Lessons learned indicated the need to review strategies on a regular basis in order to respond to changing demands in the sector. As a result, it was soon realized that management issues including policy evolution and change were central to acceptability of the new concepts and a key to the sustainability of water and sanitation projects. NETWAS responded to this by expanding its mandate to cover management and policy issues in the sector in addition to technology issues.

The Goal

NETWAS' overall goal is to contribute towards increased sustainability of community-based water supply and sanitation projects by enhancing the capacity (numbers, knowledge and skills) of sector actors. NETWAS' short term objectives are to:

- establish/ strengthen a dynamic and functioning network of water supply and sanitation institutions in Eastern Africa;
- increase sector knowledge in appropriate technologies and sound sector management skills through organization of selective, specialist and focused training programmes;
- strengthen the sector capacity in adaptive research/ learning;
- disseminate sector information and document and disseminate lessons learned on a regular basis;
- enhance the capacity of NETWAS to offer a high quality and quantity of advisory and consultancy services;
- assure a **well-managed, market oriented organization**, which is sensitive to the needs and demands of the sector.

In order to achieve these objectives NETWAS has established four programmes as follows:

Training: Four regular training courses are offered in collaboration with partner/associate institutions. These are: Management for Sustainability in Water Supply and Sanitation with IRC; Environment Management and Environmental Impact Assessment courses with UNEP, IUCN, Habitat and Infraconsult Geneva; and Participatory Planning, Monitoring and Evaluation with UNDP-World Bank Water and Sanitation Program. Plans are under way to institute two additional courses starting from 1997: one on Solid Waste Management with SANDEC and the other on Participatory Hygiene with IRC.

Tailor-made courses are also offered to clients on request in the following areas: participatory training methods, construction skills in appropriate technologies, environmental health, and management for sustainability in water supply and sanitation.

Networking and information services: NETWAS has established a specialized Documentation and Resource Centre with over two thousand sector publications, which actively disseminates sector information in the region. The Centre publishes two newsletters - *Water and Sanitation News* and *NETWAS Update* - both disseminated to sector actors on a regular basis. These initiatives assist NETWAS to keep abreast of new developments in the sector which are then disseminated to its partners. On the

global perspective, NETWAS hopes to constitute a Home Page on the INTERWATER Website in which newsletter articles and other information will be available.

Community support and research/ learning: This is best portrayed by a current participatory action research programme which is being implemented in collaboration with IRC and local sector institutions in six countries world-wide, namely: Colombia and Guatemala in Latin America, Nepal and Pakistan in Asia and Cameroon and Kenya in Africa. In Kenya a National Reference Group assists to establish linkages with organizations and individuals involved in community management of water supply systems.

Finally, **advisory and consultancy services** are provided for clients in selected areas of its operation.

Successes and Challenges

In accomplishing all this, NETWAS has experienced successes and challenges. Some of the greatest challenges have been the advocacy work towards an evolution from a sector managed by central government to one managed by communities and local authorities, and the advocacy work in the review and change of the curricula of formerly traditional and conventional approaches in the sector training institutions. In most cases, NETWAS efforts and those of other sector advocates have begun to bear fruits: the sector training institutions and even the government ministries in the Eastern Africa region are now active in facilitating the success of this practical approach.

NETWAS is pleased that after a decade of efforts its training programmes, information dissemination and consultancy services are being keenly sought by partners who a few years ago considered the NETWAS approach unconventional and below the internationally acceptable standards of the West. These partners now realize and appreciate the need to carefully evaluate and adapt the Western technologies, approaches and policies to the appropriate local conditions in order to ensure sustainability of water supply and sanitation projects. Consequently, NETWAS prides itself in having developed into a resource centre to serve the needs of the sector in the Eastern Africa region. NETWAS would like to continue to provide the best to the sector.

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CINARA as Resource Centre for Latin America

CINARA (Instituto de Investigación y Desarrollo en Agua Potable, Saneamiento Básico y Conservación del Recurso Hídrico) is a research and development institute of the University of Valle (Univalle) in Cali, Colombia. CINARA's mission is to contribute to the improvement of the quality of life in marginal human settlements and to conserve water resources, through the development of knowledge and the transfer of working methodologies and technologies in the water supply and sanitation sector. The institute's work is directed towards developing technical and methodological alternatives that are compatible with the environmental and cultural conditions of the area in which activities are concentrated. CINARA considers the community to be the leading manager of its development.

An Academic Perspective Towards Development

CINARA's current activities are the result of 15 years of work, which began with the establishment of an interdisciplinary working group within the Engineering Department of Univalle. From this working group it became a regional water supply and sanitation resource centre, and was officially established as a university institute in 1995. At present CINARA enjoys a double legal status - it is both a non-profit foundation and a university institute, which gives it the freedom to develop its own training curriculum.

At present the institute operates in collaboration with a network of institutions and professionals not only from Colombia, but also from other countries including Brazil, Peru, Ecuador, Venezuela, United States, Canada, United Kingdom, Netherlands, Switzerland and India.

Aiming to strengthen its research capacity, CINARA established a Research and Technology Transference Station at the premises of the municipal Public Works in the Puerto Mallarino area of Cali, under an agreement between Univalle and the Public Works, and with the support of national and international organizations. This research station has become one of the institute's bases for the strengthening of human resources within the sector, both at national and international level. Different organizations send their staff to the station for practical work experience.

CINARA has established a documentation centre at the research station, which provides important support to research, and to technology transfer and training activities. Extensive use of the facility is made by students enrolled in

post-graduate courses in sanitary and environmental engineering offered by Univalle in agreement with the Institute of Hydraulic and Environmental Engineering (IHE), and Technical University Delft (TUD), both of The Netherlands.

Research and Technology Transfer for Development

Experience in the WSS sector in Colombia has shown that besides technical components, interventions must include socio-economic and cultural aspects in order to increase sector effectiveness and efficiency. Therefore efforts should be directed towards reliable and economically competitive solutions which can be administered, operated and maintained at local level with a minimum of external support, and without endangering the environment.

This approach is supported by national and international policies: Agenda 21 puts emphasis on the fact that water and sanitation problems around the world are not primarily of technical, but also of political and educational nature. The secret of success lies both in technical knowledge and consideration of social and cultural attitudes.

CINARA sees research as a means to generate the necessary knowledge and methodologies to stimulate development. Its development and dissemination of knowledge facilitates the transfer of technologies. This strategy is currently being promoted and carried out in different regions through "Learning Projects in Teamwork", which allow room for dialogue and joint capacity building among communities, institutions and universities.

Through various projects, both national and international, and with the support of a network of both government and private institutions, CINARA has developed a working methodology that is based on community participation, and inter-institutional and interdisciplinary work. The projects provide an environment for learning, training, coordination and conflict solution, and a promising approach for building the capacities of communities and institutions. Three large research and development programmes can be distinguished within CINARA: drinking water, basic sanitation and institutional development. Through formal education, informal education and regional programmes CINARA transfers knowledge gained at both national and international levels.

Conclusions and Perspectives

Achievements in science and technology development are the product of processes that require continuity and resources. CINARA's experience shows that in a country with limited resources for research in the sector, a clear

vision and an academic mission can make it possible to establish a research institute which is capable of carrying out development research in a continuous manner, and which can compete at international level.

One of the challenges facing CINARA is its consolidation as an institute of high standing for research and development. A second challenge is its orientation towards being a training institute, not only for traditional undergraduate and graduate courses, but also for training which will strengthen the capacity of research in the sector.

Another challenge lies in the dissemination of results. In the traditional Latin American culture information is spread orally. The institute is improving its skills in systematizing processes and projects.

CINARA sees a role in stimulating research on social and political sector issues, leading the search for actions that can contribute to a participatory democracy and to the strengthening of local governments in the context of decentralization. There are also many possibilities related to the strengthening of institutional and community capacities, and for research and technology transfer in marginal urban areas - a priority for the remainder of the 90s and into the next century.

CINARA, promoting environmental protection and communities' control over their own development, builds on a future of research and technology transfer as an integral solution to sector problems.

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Strategic Elements for Capacity Building

The success of sector development is largely dependent on professional support services at the national level.

Therefore, the development of national resource centres is emerging as an important issue. For several years IRC has been involved in capacity building of sector agencies, and building on past and current experiences it is preparing for a more profound support role in the coming years. In August 1995 a more comprehensive programme for resource centre development was initiated, which has been called "DROPS", Developing Resources in Operational PartnershipS.

Working in partnerships to enhance sector efficiency and sustainability is seen as a very important element of almost all of IRC's activities. In IRC's experience capacity building is always a process of joint learning through different types of activities, depending on the local situation. Thereby it is very important to jointly determine objectives and activities, so as to avoid misunderstandings. Partnership is sought on the basis of shared philosophies which entail providing better assistance in improving the water supply and sanitation conditions for marginalized people.

In the case of IRC, capacity building in operational partnerships is focused on subject areas linked to IRC's areas of expertise (community management, participatory approaches, hygiene education, etc.), for which there is a local demand. Normally, the partner organization receives support in the development of skills related to the services and tools IRC itself uses and provides: documentation and information, publications, research, training, advisory services and advocacy. For the development of each of these tools and services, IRC offers specific expertise, e.g. in case of training, participatory training based on sharing experiences; in case of documentation and information, the acquisition of grey literature.

In March a discussion with all IRC programme staff was held to identify strategic elements for the development of DROPS activities. The day started with a humorous sketch which set the tone for discussions on 'do's' and 'don'ts' in establishing relationships and collaboration with southern partners.

The group agreed that the initiative for DROPS should always lie primarily with partner organizations - it should be demand driven. Whatever approach is selected for DROPS activities, for both organizations there is always a beginning (an idea, an objective), and an end (a purpose).

The group concluded that a strategy for DROPS may be focused on only one tool or service or one subject area, or in the case of a more holistic strategy, on several tools or services and subjects, depending on the local situation and needs.

The discussions revealed that although a general plan of action for DROPS can be identified and developed, approaches and processes usually vary widely in different regions and countries. Another important conclusion was that a strategy for DROPS should be very flexible, providing the possibility to use different approaches and tactics, depending on the "couleur locale". It was strongly suggested that successful examples of IRC's DROPS experiences should be evaluated and documented, to offer a better opportunity to learn from our experiences.

It was clear from the *DROPS* discussion day that developing operational partnerships will provide many challenges, and many questions remain unanswered. These are a few points which IRC must consider in its approach:

- Should *DROPS* activities be developed on the basis of a needs analysis in a country or region, or should existing good working relationships form the basis?
- Why and how does a partner select IRC and how does IRC select a partner?
- How will the partners adjust to one another's expectations and philosophies?
- Once self-sufficient resource centres in developing countries have been established, how will the nature of our partnerships evolve?
- How will availability of or need for donor funding affect IRC's *DROPS* strategy and activities?

We invite readers to respond to the issues in this Newsletter, and to share some of their experiences in this area.

Upcoming Events

Stockholm Water Symposium. Stockholm, Sweden, 4-9 August, 1996.

The theme of this year's symposium, organized by the Stockholm Water Company, is "Safeguarding water resources for tomorrow - new solutions to old problems". Workshop topics include intersectoral competition for water, groundwater for the next generation, water and health, fulfilment of water supply and sanitation objectives, capacity building for integrated water management, communication, young scientists workshop, and comprehensive water policies and their local implication. For further enquiries contact:

Symposium Secretariat
Stockholm Water Company
S-106 36 Stockholm
SWEDEN

Tel: +46-8-736 20 21
Fax: +46-8-736 20 22
E-Mail: sympos@sthwat.se

22nd WEDC Conference: Reaching the Unreached - Challenges for the 21st Century. New Delhi, India, 9-13 September 1996.

The conference is being held in conjunction with the 19th National Convention of IPHE, India. Topics include behavioural change, institutional issues, household water security, problems of mega-cities, participatory water resources development, women's participation. NGOs and private bodies in the 21st century, and low-cost water and sanitation. Direct further enquiries to:

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Water Policy: Allocation and Management in Practice. Cranfield University, Silsoe College, Bedford, U.K. 23-24 September 1996.

This international conference aims to provide a forum for the exchange of current experience in water policy implementation, and to examine, in the light of principles and concepts developed in the last decade, successes and failures in the practical implementation of integrated water policy. It is intended for managers, engineers, scientists, economists, lawyers, politicians and others in water and water-related sectors. The programme includes water resource management strategy; water environment protection; institutional and social aspects; water allocation; water economics; water demand and technology; political and legal issues and water management. Enquiries should be directed to:

Mrs. Carolyn King
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Erratum: In WaterNewsletter no. 240, February, 1996, page 3, we stated that one of the observations in the village exchanges in Nepal was a lack of regularity of village development committee meetings. This should have read: a lack of regularity of maintenance committee meetings. Our thanks to NEWAH for bringing this to our attention.

NEW ADDRESS FOR IRC AND THE WATER NEWSLETTER

ON 1 JUNE 1996 IRC WILL MOVE TO A NEW LOCATION.
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WATER NEWSLETTER

Developments in water, sanitation and environment

IN THIS ISSUE:

- SOCIAL MARKETING AND SELF-PROMOTION FOR HYGIENE AND SANITATION IN DOSSO, NIGER
- CALL FOR CASES
- HYGIENE EDUCATION BY PEERS: AN EXPERIENCE FROM BURKINA FASO
- HYGIENE EDUCATION: A UNICEF-ECUADOR INNOVATIVE EXPERIENCE IN COOPERATION
- HYGIENE EDUCATION COURSE
- NEW PUBLICATIONS

NUMBER 242, JUNE 1996

Social Marketing and Self-Promotion for Hygiene and Sanitation in Dosso, Niger

The Rural Water Supply Project in the region of Dosso, in the south of Niger, was started in 1986. At first, the project was focused on safe water supply. During the third stage (in 1994), a Hygiene and Sanitation (H&S) programme was integrated. The programme develops its own appropriate (i.e. effective and sustainable) strategies through pilot activities. The implementation of the programme is made possible by collaboration between the regional water department and the regional health department.

Objectives of the H&S programme

The general goal of the H&S programme is to improve hygiene and sanitation behaviours of households and communities within a self-promotion framework. Specific objectives, focusing on those practices which have the greatest influence on water-related diseases and sanitation, are:

- * keep water clean from the moment of collection until actual consumption;
- * build, use and maintain installations for disposal of human excreta;
- * increase the number of women producing local soap, thus promoting personal hygiene;
- * wash hands before eating or serving a meal and after defecating.

While most of the project's objectives apply to the whole operations area, some additional objectives are relevant to specific local conditions. For instance, in areas where dracunculiasis is endemic, an added objective would be to introduce the habit of filtering water through cloth or screens, especially in small agricultural communities with no water source available.

Three strategies

In the current stage of the programme the focus is on finding a balance between quantity and local capacity building. For this, three strategies have been developed,

aimed at villages already equipped with an improved water source: social marketing, self-promotion and special school programmes. In a later stage, these strategies will be evaluated to assess their effectiveness and impact.

Self-promotion

This is a fairly new approach for the programme and is only being applied in five villages. The added objective for these villages is: support families and communities in planning and implementing local initiatives for improving hygiene and sanitation with broad-based community participation. This strategy can be used in well-organized villages.

Project staff visit villages once a week for six months. If the approach is well received, the village will stay with the project for four years, until its completion, but staff visits will be less frequent. The villagers start by making a broad plan for the whole period, based on concrete objectives they set themselves. Designated village groups or persons regularly monitor the progress of the programme implementation and its results.

Social marketing

In less well-structured communities, a social marketing approach is being used to focus attention on articles and behaviours identified as having the greatest influence on water-related diseases and sanitation: latrine slabs, ladles, soap, hygienic use of latrines, hand washing. Social marketing activities are based on commercial marketing principles:

- 1) provide for these articles and ensure these behaviours at affordable costs (in terms of money and labour);
- 2) the advantages (propriety, appearance, status) gained by the target groups form the incentive of the actions.

After a two-year period of implementing actions, the village will be monitored for one year in order to promote the use of latrines and establish new behaviours.

School programmes

The implementation of this aspect of the project depends on the interest shown by schools and the means available. The programme consists of:

- * courses for pupils;
- * defining actions to be undertaken;
- * defining tasks of school committee;
- * electing school committee;
- * deciding on types of latrines to be built and on community participation;
- * setting up of latrine use regulations and an agreement between village and project;
- * latrine construction;
- * monitoring of latrine maintenance and school committee actions.

Call for Cases

Like the programme in Dosso, many programmes are trying to find a balance between low- and high-cost approaches for hygiene education and promotion. While an approach which tries to address as many people as possible (eg. mass-media campaigns) involves a low cost per person addressed, its impact will be limited. A choice for an approach which includes working towards the development of problem-solving capacity at the community level is much more labour intensive and therefore very costly.

IRC is very much interested in receiving information from projects in the field which are experimenting with the most cost-effective way of working, e.g. by combining these approaches and/or modifying costly participatory approaches into more affordable ones. We would like to compile this information and see whether lessons can be learned that are useful for wider dissemination.

Should you have an experience to share, please write to IRC, attn. Ms. Eveline Bolt or send E-mail to bolt@irc.nl. In exchange you will receive a copy of the experiences which have been compiled.

Hygiene Education by Peers: an Experience from Burkina Faso

In the North-Western area of Burkina Faso, the Mouhon Region Rural Water Supply Project is currently experimenting with hygiene education by peers.

The project is implemented by the Regional Water Department of the Mouhon Region and has reached its fifth stage, which covers the period May 1994 until May 1998. It is financed by the Netherlands Government, and receives

technical support from IWACO, a Dutch water and sanitation research agency.

Hygiene education is carried out in close collaboration with the Ministry of Health. Its purpose is to improve hygiene behaviour in order to help reduce water-related disease morbidity and mortality.

Peer education as in the above mentioned project means education given by villagers, for villagers. The experimental phase of this form of hygiene education was implemented in 59 villages between September 1994 and December 1995.

Hygiene Education (HE) activities

Hygiene education activities are carried out by village teams. Each village is divided in small districts on the basis of which the teams are formed: in each district the population chooses a man and a woman from among its members. The teams make house calls and arrange district meetings at which simple hygiene behaviours are discussed. A total of 451 villagers have been chosen for the teams in the 59 villages during the experimental phase. They all work voluntarily two half days a week on HE activities.

Prior to the start of HE activities, a background survey was conducted in some villages of the area by project staff, health education workers and the local population. The survey allowed them to make an inventory of risky hygiene behaviours. Based on these risky behaviours, themes and messages were developed with help of the population. A limited number of these messages or recommendations are then propagated during a period of four months, called a cycle.

During a cycle, each household is visited twice by a team. At the first visit, the team discusses risky behaviours and their consequences with the household members, and conveys the chosen recommendations. At the second visit, the feasibility of the recommended practices are discussed. Educational and promotional tools available to the team include a series of pictograms that have been drawn up before each cycle, on the spot, with the population.

In addition to the house calls, the teams organize district meetings, one for the men and one for the women.

During the first few cycles, the village teams are intensively supported and monitored, as peer education is a novel activity. Health education workers visit each operational village twice a month to help a district team with its household visits or meetings. Every month, they organize a meeting in each village with all the teams to discuss the progress of activities and the problems encountered.

An important aspect of the Hygiene Education programme in the Mouhon region is training. Village teams are trained for five days prior to each cycle by health education workers. Training is simple, visual and focused on the practical aspects of the team's tasks. The health workers themselves have been trained in health and hygiene matters and in educational techniques.

The impact of hygiene education activities on villages is measured by the village teams themselves. For each cycle, one or two indicators for the most important recommendations are picked out and used for observations at the start and the end of the cycle. Because more than 70% of the villagers are illiterate, pictogram cards are used to collect information. The analysis of the collected information should give an indication of the actual change.

Strong points

The experimental phase has brought out the following strong points:

- * villagers and village teams are motivated to carry out hygiene education activities;
- * the pictogram series is a useful tool for the household visits and the meetings;
- * the involvement of the population in the planning cycle, implementation and evaluation is effective and efficient;
- * insight and behaviour change for the better.

Some points to be improved

- * village teams need more support during the evaluation stage of the cycles;
- * women should be involved more actively in education activities;
- * results of cycle evaluation should be discussed with all persons involved in education activities in order to improve implementation of future cycles;

Fact sheets on the different aspects of peer education in the Mouhon region have been written up. For exchanges or additional information on this experience, please contact:

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Hygiene Education: A UNICEF-Ecuador Innovative Experience in Cooperation

The Water and Sanitation Project is part of the Andean Subregional Programme of Basic Services Against Poverty, PROANDES-Ecuador, which is located in the rural areas of

four provinces in the Andes and one on the coast, where the majority of the country's indigenous and black population live. With financial cooperation from the Spanish Committee and the Interamerican Development Bank IDB, PROANDES is able to serve 460,000 people in 384 extremely poor communities. In this project, the improvement of service quality through sanitary education was seen as imperative in order to produce changes to empower communities.

The innovative hygiene education experience was led by UNICEF in collaboration with communities, the governmental Environmental Sanitation Office and external support agencies such as CARE and USAID. In 1993 UNICEF generated a process of change which began with alternative plans for dealing with sanitation problems aggravated by traditional hygiene education from state counterparts through formal courses and theoretical training. The sanitary and hygiene practices in families, schools, daycare centres and communities in general continue to be deficient; the majority of the population contaminates the water, does not (properly) use latrines or other excreta elimination systems; and neglects the environment. This behaviour is responsible for a high incidence of diarrhoea, and has caused a cholera epidemic.

Hygiene education was the central project component in the PROANDES integrated water project; the others were safe water supply, excreta elimination, control and elimination of garbage and wastewater, and environmental preservation. Hygiene education had a synergetic effect not only in the water and sanitation project components, but also in the other PROANDES projects: health, nutrition, education, child development and social communication.

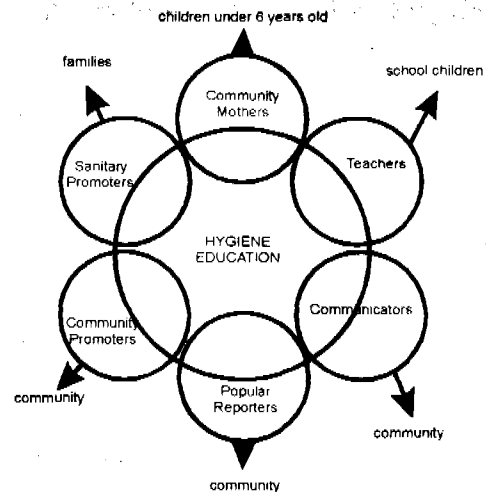
Hygiene education is carried out with direct participation of community resource persons who are not only the principal actors, but also the subjects of these actions, with technical support from government institutions, radio stations and UNICEF. Sanitary education is adopted as an integral and continuous process.

All community training is based on participatory methodology - Reflection-Action-Reflection - in which the concepts learned are applied in practice. The training contents basically covers the importance of water and environmental sanitation in health, and child, family and community development; personal hygiene; care, disinfection, boiling and conservation of water; adequate use and maintenance of latrines; garbage and wastewater control and elimination; food hygiene; home cleanliness; daycare centres and schools; and environmental preservation.

In sanitary education a series of simple educational aids are used: written and oral material, audiovisuals, tests and more. Their contents are disseminated through alternative "face to face" means of communication, mass communication and formal education with participatory methodologies and a gender approach.

The following social actors from indigenous, black and farm communities participate:

- **sanitary promoters** elected by the communities according to the established profile, reach families with basic water and sanitation, health and nutrition messages through face to face communication during house visits and educational talks during mother-organized group meetings and in community assemblies.
- **community promoters** from the "Caravan for Life" alternative community project. They are popular artists also chosen by the communities who carry basic messages in water and sanitation, health, nutrition, education and children's rights through music and popular theatre techniques, combining and conjugating expressions born from their own cultures as well as from the occidental culture.
- **popular reporters** who with technical support produce and diffuse messages through local radio stations with the same contents as mentioned above.
- **community mothers** in charge of tending to children under six years old in the daycare centres, and whose role is to improve the children's health and hygiene conditions through daily personal hygiene practices and the cleanliness of the children's physical surroundings.
- **primary school teachers** provide theoretical knowledge on hygiene education and supervise the practical application of this knowledge to children. A manual for first and second grade school children, "For a nice, clean and healthy world", based on stories, games and children's themes, was produced to support the teachers' work. This material has been acquired and is being used by some NGOs working in the field of education and in water and sanitation in Ecuador. The Ministry of Education has committed to reproducing and using this material within the national educational system.
- **social communicators** of provincial and local radios diffuse educational messages on diverse subjects concerning hygiene education, child and maternal survival, and children's and women's rights throughout all rural communities; the messages were produced in a joint action between UNICEF personnel and the radio technicians.



As part of this process, a monitoring procedure is carried out on changes in community, family, school children and daycare centre hygiene practices, through the use of KAP (knowledge, attitudes, practice) surveys. These are carried out annually by the same community sanitary promoters, and their results are important feedback for the counterpart and for UNICEF.

The process followed in PROANDES Ecuador sanitary education points towards the sustainability of the water and sanitation projects and, even more importantly, permits the poor communities' and families' empowerment. The success factors relate to the following aspects: consideration of the communities' own human resources in carrying out the hygiene education work, rather than hiring urban personnel; making hygiene education a continuous process rather than a formal training course; treating hygiene education as a priority component in an integrated project; the use of a combined focus of education and training means and instruments used at formal and non-formal level, and through massive and interpersonal communication; and the use of participatory methodologies.

For more information please contact

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Hygiene Behaviour Studies in North Pakistan

In Gilgit, North Pakistan staff of the Water, Sanitation, Health and Hygiene Studies project of the Aga Khan Health Service carried out a number of studies of domestic and personal hygiene. These studies included a rapid assessment of the water and sanitation situation, in-depth

household studies, a baseline KAP (knowledge, attitudes, practice) survey and a microbiological study of handwashing.

Why research?

Analysis of research results helps to identify risky behaviour and the so-called pre-disposing, enabling and reinforcing factors that influence people's behaviour. Predisposing factors are mainly present in the minds of people and include knowledge, attitudes, values and beliefs. Enabling factors are often conditions in the environment that are necessary to perform a certain behaviour, like personal skills and resources. Reinforcing factors are related to the (dis)approval of a certain behaviour by people who are important, like the mother-in-law and the teacher. Insight in these factors can explain people's behaviour and addressing them in a hygiene education programme can lead to the desired changes in behaviour.

Based on the analysis of the data and using a matrix of health behaviours, target behaviours were selected and possible messages identified to be taken up by the Water and Sanitation Extension Programme (WASEP). This abstract deals with the research methodologies applied rather than with the research results.

Research methodologies

1. Rapid water and sanitation assessments

The rapid assessment took place in all districts of the project area. The methodologies used included in-depth interviews, observation during household visits and village transect walks, using interview guidelines and village profile formats. Informants included community health workers, female health visitors, doctors, male and female social organizers, council members, shopkeepers, local activists and village women.

2. In-depth household studies

In order to obtain reliable data on daily hygiene practices female investigators lived with families (which in Northern Areas and Chitral is not an easy endeavour) in nine selected villages. The overnight stays were arranged together with the male study team members a few days before the start of the study. In each of the villages ten households were selected during a village walk, considering the socio-economic status, the distance to the water source, religious background and the willingness to cooperate. In order not to miss any of the household activities preference was given to the traditional single room houses. The activities carried out during the in-depth household studies were:

- a pocket chart exercise to assess water consumption
- spot-check observations, using a pre-defined format

- structured observations, using formats
- interviews, using a small questionnaire

3. Baseline KAP survey

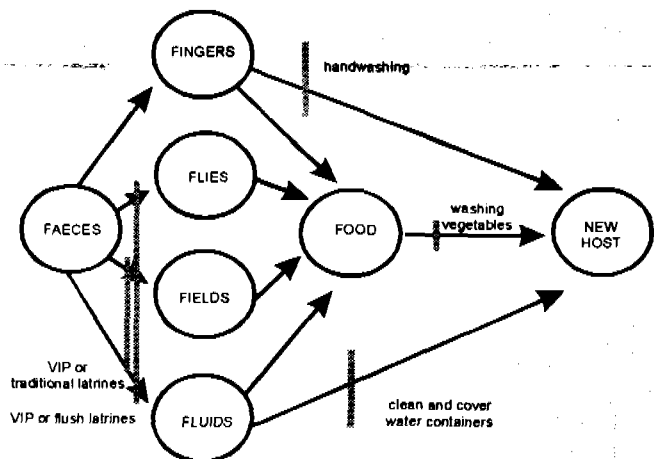
The survey was carried out after the in-depth household studies with the objective to:

- substantiate the outcomes of previous studies and to answer or verify any deficiency in the existing data
- provide additional data to facilitate programme and policy decisions
- develop a baseline instrument for use in WASEP
- provide crucial data on hygiene behaviours and other social indicators.

Twenty-one villages were randomly selected. To allow triangulation of data the nine villages were also included where in-depth household studies had taken place. In each village ten males and ten females were interviewed.

4. Handwashing study

To check the validity and appropriateness of the message "Wash your hands with plenty of water before the meal" the reduction of E-coli bacteria on hands after washing thoroughly with water was measured.



Proposed WASEP activities: barriers to contamination routes (adapted from WHO, 1993)

The data thus obtained not only allowed the selection of target behaviour, but also gave much information about the above mentioned predisposing, enabling and reinforcing factors. WASEP aims at establishing the primary barriers (WHO, 1993) by working towards prevention of infectious organisms from getting into the environment. This will be done through promotion of safe disposal of faeces and avoidance of activities in the area before the inlet of the water tank. The secondary barrier will be established by promoting selected target behaviours that cut other disease transmission routes.

Source: van de Korput, J., Muneeba and Langendijk, M. (1995). "Hygiene behaviour in North Pakistan, the results of a quantitative and qualitative study" (Aga Khan Health Service, WSHHS-project).

Short Course on Hygiene Education

The course *Hygiene education and promotion: planning and management for behavioural change* has been organized three times at IRC in the Netherlands, and was organized in collaboration with CINARA (Colombia) for Spanish speaking colleagues in the autumn of 1995. In March of this year the course took place for the first time in Burkina Faso in collaboration with CREPA for French speaking staff.

The course is meant for those responsible for planning and management of hygiene promotion activities. It aims at equipping participants with the latest techniques in the field of hygiene promotion and with a plan of action for improvements in their own working environment. An analysis exercise helps participants to identify constraints limiting the effectiveness of efforts to promote behavioural change. Through exchanging experiences participants and facilitators contribute to finding solutions to overcome these constraints. Topics dealt with include:

- meaningful and participatory research for the identification of risky behaviour ;
- better insight at all levels into factors that motivate people to behave the way they do;
- complementary approaches towards hygiene promotion
- technical pre-conditions;
- setting objectives and planning with communities ;
- institutional arrangements.

An overview of courses for the remainder of 1996 and early 1997 is given below.

DATES	LANGUAGE	PLACE
16-27 Sept.	Spanish	CINARA, Colombia
28 Oct.-15 Nov.	English	IRC, Netherlands
early 1997	French	CREPA, Burkina Faso
early 1997	English	NETWAS, Kenya

More information can be obtained from IRC.



New Publications



AHRTAG *Update* is a unique current awareness service on primary health care and disability issues in the South, available from AHRTAG (Appropriate Health Resources & Technologies Action Group). The publication is issued 10 times a year and describes 150-200 new materials added every month to AHRTAG's bibliographic database. The database includes articles, books, manuals, reports and unpublished materials on a wide range of issues such as adolescent health, evaluation, health education, HIV and aids, planning and management, programme

implementation, structural adjustment, training and urban health.

The *AHRTAG Update* lists materials focusing on the practical aspects of primary health care and community-based rehabilitation in the South providing an invaluable source of reference for all those involved in the delivery of primary health care in the South. An annual subscription costs £52/US\$104. For more information contact:

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AHRTAG's primary health care database is now also being offered on the Internet. The database describes over 15,000 materials held in AHRTAG's Resource Centre, focusing on the practical aspects of primary health care and community rehabilitation. Many of the unique materials in the collection are not elsewhere available in the North.

AHRTAG is offering one month's free access to the database. The annual subscription fee for users in the North is £200. A document delivery service is also available which allows for up to 50 journal articles to be photocopied each year, subject to current copyright legislation, for a total annual subscription fee of £550.

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Note: In the last *Water Newsletter* we announced our new address as of 1 June. In that message we printed an erroneous E-Mail number. The correct number is general@irc.nl

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WATER NEWSLETTER

Developments in water, sanitation and environment

IN THIS ISSUE:

- LIFT WATER BY ROPE PUMPS
- THE COMMUNITY AS RESEARCHER: LOCAL RESEARCH TEAMS IN GUATEMALA AND COLOMBIA
- CALL FOR CASES ON PROMISING WRM APPROACHES
- WORLD WATER COUNCIL NOW OFFICIAL
- NEW PUBLICATIONS

NUMBER 243, AUGUST 1996

Lift Water by Rope Pumps

Lifting water from a well is not an easy job. If you install mechanical handpumps, most break down soon after installation; if you leave the well open there are serious risks for contamination. What is a good technology that will continue working in a poor rural village far from town, with little risk of contamination of the well water? And, how can a lifting technology reduce women and children's heavy job of getting the water from deep down - sometimes as much as 40 metres - into their buckets and jars?

The solution was introduced in Nicaragua 13 years ago. It is called the "rope pump". In 1983 the first prototype of the rope pump was installed, and was further developed with inputs from technical institutions and farmers. It was particularly these farmers who indicated that this water lifting device would make their irrigation work easier. They could manufacture it themselves with local materials (timber and rope) and it was socially acceptable and financially sustainable. Farmer-to-farmer workshops spread the technology.

The drinking water supply sector became interested, and with contributions from government departments and Nicaraguan and international organizations, the technology was further adapted and improved to make it sufficiently strong and durable for community water supply. The Nicaraguan private sector further improved, but particularly promoted the rope pump. One leading workshop, Bombas de Mecate SA, has sold some 3500 rope pumps.

Before spreading the good news to the rest of the world, this reported success had to be evaluated. To be assessed were the technical functioning and performance, materials used and manufacturing quality, comparison with other "hand" pumps, success factors in Nicaragua, technical and financial sustainability, affordability, cost effectiveness, acceptance, private sector involvement, and potential for replication by the private sector in other countries.

The Netherlands Government, the SNV-Netherlands Development Organization and IRC provided funds to send a multi-disciplinary expert team to Nicaragua. They listened, they asked, they observed and they saw with their own eyes that the rope pump is truly a water lifting technology that is sustainable at the low-income community and household level. Why? First of all its O&M is relatively simple and cheap because the rope pump does not have complicated mechanical parts. While the rope pump needs constant attention and simple but regular maintenance, users can do it themselves with some minimal support from the private sector e.g. through some repairs and spare parts. The evaluation also saw that the rope pump technology is accepted all over Nicaragua.

The evaluation team concluded that the rope pump has great potential as an appropriate option to the range of groundwater lifting technologies in other countries. It was concluded that also in other countries the rope pump can be manufactured locally, marketed and installed by the private sector, including smaller mechanical workshops. Because the rope pump is relatively cheap to buy (in Nicaragua US\$ 80), it is affordable for community users groups, individual households and farmers, where groundwater is not deeper than some 50 metres below ground level. A cheaper model, the self-made rope pump (in Nicaragua US\$ 25) could be considered as an alternative for small groups of users.

The conclusion of the evaluation does not mean the end of other water lifting technologies. It does add a low-cost, effective and sustainable technology for several rural water supply conditions.

Follow-up workshops were held in Nicaragua to discuss what could be done with the recommendations of the evaluation. This resulted in a new three-year Water Supply and Sanitation Programme in Nicaragua funded by COSUDE (SDC: Swiss Development Cooperation),

including the support for international technology transfer of the rope pump. Activities include the publishing of technical production manuals in different languages and the establishment of a training centre to teach people how to manufacture a strong rope pump. The rope pump is already gaining popularity in neighbouring countries such as El Salvador and Honduras.

The interest in the evaluation results is great; from all over the world support agencies and projects want to know more about "this" rope pump. Therefore IRC plans to publish a promotional document, to convince policy/decision makers and planners at the international and national level of the great potential of the rope pump as a sustainable water lifting technology that can be locally manufactured. Funders for this publication, which will be available in English, French, Spanish and Portuguese are being approached.

In the meantime, parties interested in getting acquainted with this technology can contact:

The Technology of Transfer of the Rope Pumps Co. Ltd.
Bombas de Mecate S.A.

PO Box 3352
Managua
NICARAGUA

The Community as Researcher: Local Research Teams in Guatemala and Colombia

*In the context of IRC's four-year, participatory action research project **Role of communities in the management of improved rural water supplies in developing countries**, we reported in earlier issues on village walks in Cameroon (no. 235) and village exchanges in Nepal (no. 240). In this issue we cover the role of the community as researcher in Latin America.*

In seven communities in Guatemala and Colombia there are local research teams (LRTs) made up of community members. All of the teams have been created within the framework of the four-year IRC inter-institutional project aiming at producing community-based methodologies through an action research process. In Latin America this project is being coordinated by CINARA in Colombia and by Agua del Pueblo in Guatemala.

These community research teams were not merely considered a "methodological step" to ensure community involvement. Rather, they are indispensable actors and agents of change in implementing action research and using its results. These LRTs have become the main promoters and leaders of the community action research process.

How are local research teams formed?

Once communities agree to participate in the project, they elect a local research team (LRT). Selection criteria were established at the project level, and refined by the communities. While each community selected its own criteria, three were common to all seven communities from both countries:

- the candidates come up voluntarily
- literacy is not a prerequisite
- the teams comprise both men and women

In La Sirena (Cali, Colombia), decisive criteria for membership were experience and affinity with community work. In Ceylan (Bulagrande, Colombia), it was the training and projection of the leaders. This led them to elect a 16-year old student, who they felt would develop into a community leader. In the Quiche zone in Guatemala, where the level of schooling is low, the most important criteria was the will to participate. Here many older, illiterate persons participate, and their presence gives LRTs a reliable image. It seems that for the communities, affinity with community work, leadership and knowledge of community history are more important criteria than schooling.

Training LRTs in diagnostics techniques

Following the formation of the LRTs, training workshops were held on diagnosis and research techniques. They were very critical of the participatory action research (PAR) techniques, and amended them to fit into their environment. After the workshop the local teams prepared the report, illustrated with drawings and photographs. The reports provided useful methodological guidelines for planning of community diagnosis. The researchers now felt well prepared to carry out a systematic diagnosis and were proud to be known as "the water and sanitation researchers".

In smaller, rural communities with low literacy level, the training workshop was integrated with the diagnosis activities. In Barrel Chiquito, Guatemala for example, the LRT initiated the workshop with very practical discussion and clarification of the concepts: What is a diagnosis? What is it needed for? How does it work? Realistic examples, like coping with the coffee plant diseases, were used. Subsequently, with support of project team members, the "talking map", the Mayan calendar, and the wheelcart were used. The map was elaborated together with other community members and served to represent the natural, social and cultural resources existing in the community.

The calendar showed the year's main events and fiestas, and with the wheelcart the main water and sanitation-related problems and causes were assessed. Discussing

and evaluating their own experience using these techniques was the most useful source of learning for the LRT in Barret Chiquito.

After training, local research teams are involved in activities related to planning and implementing the diagnosis. Experience has shown that in all communities training provides a lot of useful information for the diagnosis and that it is necessary to find a methodology that integrates these two processes better.

LRTs: main facilitators for the diagnosis

During community diagnosis researchers take up tasks such as summoning communities; conducting and facilitating community meetings using PAR techniques; translating native tongues; taking notes and reporting on activities; searching for secondary information in the community, health centres and other committees; putting together all information and preparing the first draft of the diagnosis report.

The diagnosis report may also comprise short-term improvements related to water and sanitation, which arose during the process. In these cases research teams will play the leading role in supporting the water committees to realize these improvements.

Increased Community Capacity

The creation of LRTs and the capacity and creativity shown during the process of learning social research methods and techniques, as well as the efficient and enthusiastic way in which the teams undertake their responsibilities, is proof of the capacity that arises within the communities when they feel part of their own project. When they intervene between the community and the project, the LRT is a community group that serves as a sieve for the adaptation and acculturation of project proposals before they are implemented in the community.

For more information about the project in Latin America contact Norah Espejo at IRC.

Call for Cases on Promising WRM Approaches

UNDP and IRC are preparing an overview of 12 to 15 case studies of promising approaches in the water supply and sanitation sector which include elements of integrated water management. The overview will be based on the assessment, documentation and comparison of different projects. Appropriate projects or programmes to participate in this initiative are currently being sought.

National project staff will be the key persons involved in this participatory project. They will be invited to attend a preparatory workshop in The Netherlands (November 1996) to finalize the assessment framework and receive training in participatory assessment and documentation techniques. The following five months will be used for assessment and documentation of activities in the field, involving as much as possible project beneficiaries and other working partners. Around May 1997 a synthesis workshop with all participants will be held to discuss the findings, and to identify key factors for success or failure of integrated water management.

Throughout the process a small international advisory group will be supporting the project, comprised of Dr. J. Lundqvist from the Department of Water and Environmental Studies of Linköping University, Sweden; Professor L. Vincent from the Department of Irrigation and Soil & Water Conservation of Wageningen Agricultural University, The Netherlands; and Mr. D.C. Pyakurel of the Department of Water Supply and Sewerage of the Ministry of Housing and Physical Planning in Nepal.

The project has the backing of the OECD/DAC and IRC's international Governing Board including UNDP, UNICEF, WHO World Bank and the Water Supply and Sanitation Collaborative Council. The proposal was received positively by UNDP, SIDA (Swedish International Development Assistance), DGIS (Netherlands Directorate General for International Cooperation), VROM (Netherlands Ministry of Housing, Spatial Planning and the Environment) and GTZ (German Technical Cooperation).

Anyone involved in water resources management projects or programmes who is interested in participating are requested to contact Esther de Lange, David Saunders, or Peter Bury at IRC. After consultation, staff of the 12 to 15 projects selected will be invited to participate in the preparatory workshop in The Netherlands.

World Water Council Now Official

Because the world's freshwater resources are facing serious challenges of global magnitude, the sustainability of life on Earth and its ecosystems are being undermined.

Accessibility to clean and reliable sources of water for drinking and food production is becoming more and more difficult. There is a lack of a global institutional framework to effectively and efficiently deal with the world's growing water problems.

The establishment of a World Water Council to deal with such issues was discussed as early as 1977, during the

UN-sponsored Conference on Water at Mar del Plata. It was also the subject of discussions in several subsequent international meetings. In 1994 a Founding Committee was formed, and at its meetings in March and September 1995, a conceptual framework, draft constitution and governance structure were prepared. On World Water Day - 22 March 1996 - the 34-member interim Board of Governors of the World Water Council met and unanimously approved the resolution to formally establish the World Water Council as a not-for-profit, non-political, non-sectarian NGO.

The World Water Council serves as a neutral, independent forum on water issues for its members and through them, the world community. Where possible the World Water Council will rely on existing institutions and plans to work synergistically with them to identify and fill existing gaps.

Mission

The mission of the World Water Council is to promote awareness about critical water issues at all levels including the highest decision-making level and the general public, and to facilitate the efficient conservation, protection, development, planning, management and use of water on a sustainable basis for the benefit of all life on Earth.

To achieve this mission, the Council will, among others:

- identify critical water issues at all levels;
- promote suitable mechanisms to raise awareness about critical water issues;
- facilitate arrangements for providing advice and relevant information concerning necessary actions towards the sustainability of all water sources;
- sponsor programmes and actions which promote policies and strategies for comprehensive and integrated water resources planning and management;
- assist in ensuring availability and accessibility of clean water for the poor and disadvantaged and ensuring social and gender equity in respect of water use;
- promote the implementation of effective policies and strategies for integrated management of water demand.

Membership is open to all those interested in furthering the objectives of the council, and will include national and international institutions, government agencies, private and public agencies and firms, NGOs, charitable foundations, UN bodies, municipalities, research, academic, scientific and professional organizations. Annual membership fee is US\$ 1000.

For more detailed information contact:

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New Publications



Women and Water Pumps in Bangladesh: The impact of participation in irrigation groups on women's status. Van Koppen, Barbara and Mahmud, Simeen. Intermediate Technology Publications, UK, 1996. ISBN 1 85339 336 3, 174pp, annexes.

Women's participation and the impact on their status was studied in 35 female and mixed-sex irrigation groups dispersed over the country. The NGO approach, the group strength and the main aim of the enterprise appear to have a strong influence on the outcome. There are female-managed irrigation enterprises in which male relatives are only financially involved, where women's economic, social, familial and personal status improves considerably. On the other hand, there are women's groups where women are only intermediaries for loan-taking, which has a limited impact on their status. Women heads of household contribute to and benefit from such enterprises under all conditions.

This book describes the background, methodologies and conclusions to the studies in detail, with summaries of the policy implications. The authors believe that these insights should encourage further support to gender-balanced agro-technological development in rural Bangladesh and elsewhere. For more information contact:

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WATER NEWSLETTER

Developments in water, sanitation and environment

- IN THIS ISSUE:
- RECYCLING OF SOLID WASTE A SUCCESS IN BRAZIL
 - A NEW APPROACH TO MONITORING
 - GLOBAL WATER PARTNERSHIP LAUNCHED
 - UPCOMING COURSES
 - NEW PUBLICATIONS

NUMBER 244, OCTOBER 1996

Recycling of Solid Waste a Success in Brazil

An example of close cooperation between the municipality, Community-based organizations (CBOs) and the formal and informal private sector is the Programme of Selective Collection and Recycling of Solid Waste in Recife in Brazil. Recife, the capital of Pernambuco, has 1.3 million people. Unemployment is the highest of the six main cities of Brazil and 53.2% of the working population works in the informal sector. The proportion of women-headed households is 9% above that of other Brazilian cities. The city has a serious problem with drainage, as sewerage infrastructure is poor and natural drains get blocked with solid waste. Because of limited own finances, the municipality chose for partnerships as their official strategy. Partnerships encompass drainage, removal of sewage, urban cleaning and health promotion and are run by a decentralized administration of six sectors and eighteen micro-regions, which include representatives from the communities concerned.

The recycling programme began in June 1993. Consultation with CBOs, NGOs and the municipal councils resulted in a programme promoting that households separate recyclable materials at the source and donate them to groups which collect, sort and sell them for a living. In high-income communities special containers are placed for the segregated collection of recyclables. In low-income neighbourhoods, women are stimulated to separate materials into recyclable goods in exchange for food or meal tickets, or for construction materials for a group building. For the first three months the Urban Cleaning and Maintenance Company (EMLURB) receives and sells the recyclables to the private sector. Then the project is gradually handed to over community-based organizations, which EMLURB helps to register as association, micro-enterprise or cooperative. Only equipment maintenance and social monitoring remain public sector tasks. The programme currently has 34 groups, of which 57% are led by women, involving 13,200 families.

With local industries the programme has developed a partnership to buy recyclable materials. Community pickers and cart pullers collect the separated recyclables. In Recife almost 2,000 families lived on waste picking - unqualified and mostly illiterate labourers without permits, exploited by middlemen and exposed to serious health threats. With the help of NGOs the municipal programme offers street pickers and cart pullers the opportunity to organize in pickers/pullers cooperatives. Four now exist with an average of sixteen members each. They received equipment and training on hygienic collection and sorting methods and learned how to strengthen the association, avoid middlemen and negotiate with recycling industries. As a result of the programme the number of illegal dump sites in the city has dropped from 285 to 124, a decrease of 44%.

Other programme activities are a workshop which recycles the municipality's own waste paper and gives training to those interested to learn the trade; a production unit for compost for municipal parks, used also to study waste recycling and demonstrate composting to primary school pupils gardens; and a programme to upgrade the main solid waste dump of the city, reduce the number of rag pickers on the site and improve their living conditions. Some five million tons of garbage deposited in the site have already been treated. Biological processing was initiated in March 1994 and will increase the lifetime of the dump by approximately 5 to 20 years. The dump's rag pickers and rag vendors have organized themselves in cooperatives and received help in vaccination, hygiene guidance and access to legal documents to improve their status and working conditions. They started a screening/sorting centre in September 1994. All 52 children and youth who worked in the site have been given work in communal vegetable gardens with sharing of profits as from April 1994. Recreational-educational activities began in April 1995, including learning to read and handicrafts and already involving 30% of the children. Those interested to work in

urban cleaning are assisted to join a cart pullers cooperative and help expand the informal urban garbage collection system. Some concrete results of the partnership include:

- a 73% increase in recycled materials in two years;
- a 62% annual increase in volume of material for recycling;
- a 5,796 tons/month reduction in garbage collected;
- a 56,5% reduction in special operations for waste collection;
- food supply for approximately 2,040 recycling families.

For more information contact:

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A New Approach to Monitoring

In the 1980s, about US\$ 13 billion was spent annually in non-industrialized nations for water supply and sanitation. Unfortunately, many of the projects - of all types - did not provide the benefits originally envisaged. Examples of where projects have failed include:

- After implementation, service is irregular or sources stop functioning for long periods. As a consequence, users return to less safe sources.
- Inadequate design results in a large proportion of the population within the design area being omitted, for example, poorer groups who may live off main roads or who live in disorganized urban settings.

Meeting the challenges

The challenges facing water and sanitation projects include ensuring that operation and maintenance are adequate, that cost recovery improves with a view to sustainability of services, that benefits are distributed to those in greatest need, that use of the systems leads to benefits for health and convenience as originally envisaged.

One obvious way to help address such challenges is to obtain accurate, practical monitoring information and to use it at all levels. 'Monitoring' traditionally refers to checking how projects are being implemented and resources used. Routine data systems have been set up for this. At best the information obtained from these is used to influence operational changes and to improve maintenance. At worst, information from monitoring has simply been ignored ... or passed on to donors and forgotten. Monitoring - as well as evaluation - tend to be 'donor-led', responding to questions

posed largely by grant/loan managers rather than to concerns of those involved in projects and their partners.

It is with concerns such as these in mind, that IRC has added a monitoring course to its curriculum. The course builds on the experience of the past decade. There have been several significant developments in thinking about monitoring and evaluation over the past ten years. For example: **More groups** and stakeholders have been brought into monitoring and evaluation activities. Those who have expanded roles include: beneficiaries, communities, private sector, NGO and agency staff at all levels. A wider **range of strategies** have been developed in the sector, among which are auto-evaluation and qualitative strategies.

Participatory evaluation is seen as a major strategy which holds considerable promise. This refers to the involvement of the community and management by the community of evaluation and monitoring processes. **New tools** for measurement to support these approaches have been developed. These include focus group discussions, case control methods, mapping, pocket charts, sorting and so on. There has been an emphasis on **behavioural change** among community members, as well as among service providers. This means emphasis on timely use of the results of monitoring and evaluation, in other words, on internalizing and feeding back information from monitoring and evaluation into routine activities. The World Bank calls this the **learning culture**.

"Monitoring for Effectiveness"

In the IRC course *Monitoring for Effectiveness in Water Supply and Sanitation Activities*, several principles are examined and later applied during individual assignments - principles which go beyond standard 'top-down' monitoring by a small group of managers. These principles include the following among others:

- Use monitoring information to improve project performance in the short-term.
- Consult the communities and staff at all levels (not only the managers). What monitoring issues are of interest to the communities? Communities and partners at all levels will tend to collect data that is useful and is of interest to themselves. Data should be collected and analyzed by groups that have vested interests in collecting valid data about the issue.
- Plan the flow of information from the outset. Determine what purpose the information will serve. What is the level at which action can be taken on the data? This should be the first level to receive the information - the lowest level that can act on it.
- Don't try to cover all topics. Target the monitoring. It is necessary to have indicators that can be easily and cheaply measured.

- **Keep data collection and analysis as simple as possible.** Straightforward data is more convincing. Sometimes very small samples are sufficient.
- **Collect and analyze according to specific groups where relevant.** Does the information differ for men or women, different socio-economic or ethnic groups?
- **Ensure checks and balances to improve the quality of the monitoring information.** This means that it is useful to have more than one way of collecting or checking data - more than one flow of information. This is also called 'triangulation'.
- **Stimulate participation in monitoring by the community, staff at all levels, NGOs, private sector and so on.** Use participatory evaluation. Expand the 'ownership' of monitoring.

Applying this approach is meant to improve effectiveness, that is, the continuing use of the outputs of a programme for an agreed purpose and by those for whom it was intended. Water supply and sanitation projects have much to gain from this new approach to monitoring and evaluation. For more information about the course *Monitoring for Effectiveness*, which will be offered again at IRC in 1997, please contact IRC's Training Section.

Global Water Partnership Launched

Water scarcity and water pollution increasingly jeopardize the lives of millions of people in developing countries. The crisis will worsen until countries improve their management of this essential resource. To translate the principles recently developed at international conferences on water resources management into practice, a new and promising initiative recently saw the light of day. In August 1995 the World Bank and UNDP proposed the creation of a Global Water Partnership (GWP), open to all parties involved in water resources management.

One year later, on 9 August 1996, the Global Water Partnership was launched. This was done in Stockholm, immediately following the Stockholm Water Symposium, which, with the theme "Safeguarding Water Resources for Tomorrow, New Solutions to Old Problems", provided a good setting for the occasion.

A non-political, international network

The GWP is a non-political, international network designed to translate the global consensus on water resources management reached in Dublin and Rio de Janeiro into responsive, coherent services to developing countries with an emphasis on implementation as close to the users as

possible. It will have a largely informal structure linking up with field programmes operated by Partnership members

The launch meeting was attended by nearly 200 people from developing countries, international agencies, bilateral donors and development banks, NGOs, professional associations, research and training institutions and universities. A keynote address was given by His Excellency Professor Kader Asmal, Minister of Water Affairs and Forestry of the Republic of South Africa, who, in a moving speech, urged partners to work as equals, and stressed the role of the Partnership as a mechanism to promote practical action. Several presentations were made at the meeting. GWP Chairman Mr. Ismail Serageldin, Vice President of the World Bank, shared his sense of urgency for the need for a shift in the way water resources are managed and investments are conceived. Mr. Anders Wijkman, Assistant Administrator of UNDP, spoke of the necessity to integrate coastal zone management and marine issues in the Partnership's agenda. Mr. Mats Karlsson, Under Secretary of the Ministry for Foreign Affairs of Sweden, praised the approach of utilizing the comparative advantage of existing organizations to make an impact on water resources issues. He sees the GWP as a contribution to the renewal of multilateralism, and as a new approach to international cooperation. Mr. Torkil Jonch-Clausen, Chairman of the interim Technical Advisory Committee, informed the participants of the work done to date by the Committee, and Mr. Mahmoud Abu-Zeid, Chairman of the Founding Committee of the World Water Council, discussed linkages and options for cooperation between the GWP and the World Water Council (*see Water Newsletter no. 243. Ed.*)

The GWP from a developing country perspective was elucidated by Mr. Patrick Kahangire, Director of Water Development in Uganda. His vision of the GWP is one of a pragmatic forum, in the form of a decentralized, demand-driven mechanism. He feels that few studies and more action are needed to create the necessary national and/or regional capacity for sustainable development, and he advocates the promotion of safe water and sanitation facilities while working for holistic approaches.

After detailed discussions in working groups, decisions were made on objectives and mission statement of the GWP, briefly summarized as follows:

"The mission of the Global Water Partnership is to support countries in the sustainable management of their water resources."

The Partnership aims to help people, especially the poor and other vulnerable groups, to benefit from improved water resources management, while safeguarding the environment. It promotes integrated approaches to sustainable water resources management consistent with Dublin and Rio principles, encourages people and organizations to work together in more effective and collaborative ways, and seeks to create trust and understanding, both among its partners and between them and other parties interested in the development of water resources.

Key officials of the Partnership were appointed and decisions were made as to governance structure and composition of the Steering Committee. Discussions were further held regarding membership and financing. A discussion was also held on the complementarities and overlaps of the GWP and the World Water Council. While the GWP is designed to translate the global consensus on water resources management into responsive, coherent services to developing countries, with emphasis on implementation as close to the users as possible, the WWC's role is of a longer term and strategic orientation, with ministers and top officials as its focus group. More information about the Global Water Partnership can be obtained from:

GWP Secretariat Tel: +46 (0)8 698 50 00
Sida Fax: +46 (0)8 698 56 27
S-105 25 Stockholm, Sweden E-mail: gwp@sida.se

Upcoming Courses

Effective Water Quality Management. Seminar no. 97032, British Council, Oxford, UK, . April 1997

This international seminar aims to discuss recent and current developments and future proposals in integrated water quality management - freshwater, drinking, water operational monitoring and methods, policies and strategic issues. Main topics will include: water quality standards and their determination; monitoring and health surveillance methods; user demands and impacts on water quality; pressures and resources; policy and its implementation.

The programme will be of particular interest to policy and decision makers, academic staff, managers, and senior scientists from regulatory agencies or water supply agencies. A mix of participants from developed and developing countries is sought. The fee for the seminar is £ 1390. For more information contact:

Reminder! IRC has new telephone, fax and E-mail numbers:
Tel: +31 70 3068930 Fax: +31 70 3589964 E-mail: general@irc.nl

Promotions Manager International Seminar

The British Council

1 Beaumont Place

Oxford O1 2PJ

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Fax: +44 (0)1865 557368/516590

E-Mail: International.Seminars@britcoun.org

Please refer to the seminar number in all correspondence.



New Publications



Sustainability of Water and Sanitation Systems. Pickford, John, et.al., eds. WEDC and IT Publications, London, UK. ISBN 1 85339 339 8, 153pp.

The publication contains 44 of the nearly 100 papers presented at the 21st annual WEDC conference held in Kampala, Uganda in September 1995. The papers are based on practical experience related to the conference theme - sustainability of water and sanitation systems. They describe what authors and their colleagues have done to ensure that the systems with which they are involved are planned for sustainability, implemented in a sustainable way, and have prospects for long-term sustainability. The reader can learn about what went well, and about what went wrong. There are sections devoted to management, water and the environment, rural water supply and sanitation, and sanitation and waste. *Sustainability of Water and Sanitation Systems* costs £ 16.95/US\$ 32.50.

Water Supply. UNIFEM. IT Publications, London, UK. ISBN 1 85339 344 4, 80pp.

This book aims to promote understanding of water supply technologies, water supply management and the project cycle to enable women to make informed choices. It also contains information on how to find technical and financial assistance. It is suitable for use by technical and non-technical project managers, project staff, extension officers, trainers and consultants concerned with women in development and women's organizations. *Water Supply* costs £ 7.95/US\$ 15.50 For more information about either of these publications contact:

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WATER NEWSLETTER

Developments in water, sanitation and environment

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NUMBER 245, NOVEMBER 1996

Community Sanitation in Kerala, India: Learning from Experience

Considerable effort and resources have been devoted to sanitation activities in general, and more particularly to latrine-based programmes, but with mixed or disappointing results. In Kerala, the southernmost state of India, where latrine coverage was more than double the national average in 1989 (an average of 22% of rural households below the poverty line owned latrines), a successful sanitation programme has boosted this figure to nearly 60% in the areas involved, while also addressing other aspects of sanitation, such as proper use and maintenance of latrines, washing of hands with soap or ashes, draining wastewater in a safe way and protecting traditional water sources from pollution.

The sanitation programme

The sanitation programme of the Socio-Economic Units (SEUs) began in 1989 as a component of the rural water supply programme financed by the Indian, Dutch and Danish governments. The four SEUs carry out the socio-economic activities in water with the Kerala Water Authority and design and implement the sanitation programme on their own. The programme goal is to provide poor households with permanent, good quality latrines, in such a way that they appreciate the facility and use it properly.

The implementation strategy focuses on enabling the local governments and ward water committees (WWCs - voluntary groups of seven people with at least three women working with ward populations of about 2500) to plan and implement their own sanitation programmes in their Panchayats (local government areas). The programme initially covered 75% of the costs of the latrines for households below the poverty line (income equivalent of US\$ 323/yr.). The households themselves contributed 20% in cash and about 5% in unskilled labour.

Apart from providing cash, the programme staff organizes initial motivation activities, provides training and education and works closely with the communities to support implementation of the programme. All other activities such

as acquiring materials, selecting households, organizing education activities and construction, accounting and administration, monitoring use and maintenance of latrines and monitoring selected hygiene practices, are carried out by the local councils and WWCs.

The technology selected is the double-pit pour-flush latrine with a permanent superstructure. The programme strives to reduce both net and overhead costs of the latrines without jeopardizing the quality of construction and the accompanying educational programme, through greater cash contributions from local governments and other sectoral programmes, and greater cash and kind contributions from households. Efforts are also made to train local villagers to take on programme staff tasks and form skilled support groups for the programme at Panchayat level.

Achievements in environmental sanitation

With the help of some 530 WWCs, the programme had built 35,500 latrines by September 1995. The WWCs also monitor the use and cleanliness of the latrines and the indicators for other good hygiene, with good results. About 85 to 98% of the latrines in each area are judged to be very clean. More than 80% have water stored within or very nearby the latrine.

Thus far about 5000 public taps have been installed, most with improved drainage, and a new, user-friendly standpost design has been introduced. Voluntary local standpost attendants keep the areas around the standposts clean.

By September 1995, a total of 274 school health clubs were operating. The children involved carry out a wide range of activities such as ensuring cleanliness of school grounds, classrooms and latrines; monitoring the use of latrines and hand washing; monitoring the school water point and ensuring correct use; and holding local campaigns for special health issues. The project considers the school health clubs to be a good investment in safe hygiene behaviours of the future generation.

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The project has also set up a successful women masons programme. It provides needed construction expertise in locations where masons are not available for latrine construction and provides good income for poor women who served as mason's helpers previously. This part of the programme now serves an area with a population of about 100,000 people.

The experiences of the Kerala programme are documented in the IRC Project and Programme Paper *The Community-Managed Sanitation Programme in Kerala: Learning from Experience* by J. Balachandra Kurup. This publication is one of relatively few comprehensive descriptions of an Asian experience with community-managed sanitation programmes. The programme's strategies, approaches and experiences should be of use to all those involved in community-based social development. It should be a useful source of reference for policy makers, planners and development workers.

For more information contact IRC's Publications Dept.

Innovative Emptying - Trying Out a New System in Kibera Slum, Nairobi

Kibera is the largest low-income urban area in Nairobi, covering an area of 225 hectares, with an estimated population of 470,000 and an estimated annual growth rate of 12%. Traditional pit latrines are the only excreta disposal system available. Although most households have access to a pit latrine, one latrine may serve up to 200 persons. Pits fill up quickly and emptying is problematic due to difficult access. Furthermore, space to dig new pits is seldom available. Improvement of sanitation services has a high priority among the residents.

In 1996 a new desludging vehicle, the vacutug, was developed by UNCHS (Habitat) in association with Manus Coffey Associates Ltd, with funds from Danida. Among others, the vacutug had to be able to reach into areas with difficult access; to be able to suck out the dense wastes from the latrine pits; and provide low-income communities an affordable, sustainable emptying service with a capital cost low enough to enable local entrepreneurs to provide the service.

The prototype was manufactured in Ireland with a total material cost of US\$ 1,700. The pedestrian-controlled vehicle consists of a two-wheeled tug unit attached to a 500 litre vacuum tank. A sliding vane vacuum pump evacuates the tank for sucking and pressurizes the tank for discharge wherever gravity discharge is not practical. The 5 hp engine uses a V-belt to drive either the vacuum pump or the wheels of the tug unit as required. The vacutug is presently

being tested in Kibera through KWAHO, a Kenyan NGO, which has been working in water and sanitation in Kibera for years. Once the prototype has been tested, an (adapted) local version will be manufactured and drawings will be made available to encourage local manufacture by entrepreneurs.

In Kibera, the collected sludge is deposited in the sewers which bisect the area: in principle there is a manhole available within half an hour walking distance from anywhere in Kibera. Apart from testing the technical system, the trial period is meant to establish the average number of pits that can be emptied in a day - this is necessary to calculate the fee that must be paid for a sustainable service. At present this fee is based on an estimated number of pits that can be desludged per day (8) and on the price people have said to be willing to pay for the service. Much still has to be done by way of management of the service. Observations of a day during the trial period tell the story:

"A number of pits have to be desludged in the area across the railway line. Because the direct path which is leading towards that area is too narrow and steep, we have to go around to reach the area. It rained yesterday, so the road is quite muddy and we get stuck in the mud. Luckily the operators always have a long rope with them and the Kibera children love to follow the machine around and are eager to help. When we have to cross a stream the rope is used to prevent the machine from sliding down too fast; the machine manages to get up the other side by itself, but we have to ask a number of vendors to clear the road for us to pass, they have set up their wares (mainly vegetables) right in the middle of the road.

We pass someone who is digging a hole to desludge his latrine pit bucket by bucket, as it is full. We tell him what our machine is for and he immediately stops digging and pays for one load to desludge. The operator explains the procedure and shows the man the looking glass in the machine so he can see that the sludge is actually entering the tank. In two minutes the 500 litre tank is full and we leave to find a sewer manhole to deposit the sludge. Fifteen minutes walk only to find that the manhole cover is cemented on to the manhole and we cannot possibly open it. We find the next manhole in the yard of a compound. It is difficult and takes more than half an hour to open the manhole because the lid has been put on upside down so there is no hook to open it. We pry the cover open with spades and panggas (broad heavy knife, ed.) given to us by the residents of the compound. Desludging the contents of the tank in the manhole only takes five minutes. Cleaning up takes a little longer because one of the hoses is leaking as a result of rough handling: The spilled sludge is covered by earth and the residents are satisfied with the way we leave the compound.

The owner of the latrine that was desludged would have liked us to take some more loads, but he does not have sufficient cash. Yet he agrees that the Ksh 250 (US\$5) fee per load is reasonable. As we are starting to walk on, a neighbour comes forward and asks us to desludge his pit as well. He pays Ksh 250 and the routine is repeated, but this time faster as we know where the nearest manhole is and opening it is easier this time. It shows us that once on the road, a lot of requests for emptying come directly to the

operators. We still have to develop a proper procedure for this as Teresa (KWAHO) is not always present and we do not want the operators to handle the money themselves.

We continue our way to Laini Saba where we wanted to go in the first place. A few months ago, this would still have been possible but in the meantime houses have been erected on the road reserve and even the small machine (1 metre wide) cannot pass so we have to turn back and find another way to reach this area. It shows that we have to spend more time in mapping out how we can best reach the different areas and which manholes can be used in the different areas. This will save the operators from walking the machine for nothing. At three o'clock we are back at the KWAHO office and quickly desludge two more pits nearby to increase the day's earnings a bit.

For more information about the vacutug contact:

Dr. Graham Alabaster

UNCHS (Habitat)

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Nairobi, Kenya

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Netherlands Government Earmarks 20% of Development Funds for Basic Services

The Netherlands Government has announced that in 1997, 20% of its development cooperation budget (about 1.2 billion Dutch Guilders/US\$ 700 million) will be spent on basic services, such as drinking water and sanitation, education and health care. Estimates indicate that an additional 30 to 40 billion dollars must be spent annually in order to provide the whole world with these basic services.

Together with other UN organizations, UNICEF has launched the '20/20 Initiative', in which industrialized and developing nations take a shared responsibility to invest at least 20% of their development funds and national budgets respectively, on basic services. The plan was launched at the UN Population Conference in Cairo in 1994, and by the 1995 Social Summit in Copenhagen, nearly all European countries had agreed to support the initiative.

The Netherlands Minister for Development Cooperation, Mr. Jan Pronk, provided funding to the UN to set up the 20/20 Initiative, and has been a supporter since its launch. In April of this year, the governments of Norway and the Netherlands organized a follow-up conference about the form and implementation of the 20/20 Initiative. Thirty-eight countries, of which 22 developing and 16 industrialized, attended.

In her annual budget speech to the citizens of the Netherlands on the third Tuesday in September, Her Majesty the Queen announced that the government will put

the 20/20 Initiative for basic services in action as of 1997. Countries who themselves spend at least 20% of their national budgets on these basic services will be the primary recipients of these funds.

For 1997, 0.8 percent of the GNP (gross national product) of the Netherlands will be made available for development aid - an amount of 5.9 billion Dutch Guilders/US\$ 3.45 billion. With this the Netherlands is one of the few countries keeping a long-standing international agreement among industrialized nations, to spend at least 0.7 percent of the GNP on development aid.

Scholarship for Research in Desalination and Water Reuse

The International Desalination Association (IDA), is a non-profit organization founded in 1985 and chartered in New Jersey, USA. IDA has established a scholarship fund (Channabasappa Memorial Scholarship Fund), which assists young engineers and scientists to further their education in subjects related to desalination.

The maximum grant per student is US\$ 6000. The individual selected must have other sources of funds to supplement this grant and allow him/her to complete graduate degree requirements. The following guidelines are important for those wishing to apply:

Eligibility: Must have degree from an accredited university, and be in top 10% of their class in science or engineering. Must prove admission to graduate programme in desalination or water reuse. Must show leadership and achievement potential.

Basis of Award Application: Undergraduate transcript; references (four, of which at least one from an IDA director or member); motivation for a career in desalination or water technologies. Applicants will be reviewed by the scholarship committee which will have at least two IDA members from universities.

Application Procedure: Applicant must submit application documents as mentioned above, including evidence of other source(s) of funding to supplement this scholarship.

For an application form or additional information, contact: Mr. Taysir Dabbagh

Chairman

Education and Scholarship Committee of the IDA

c/o Kuwait Fund

PO Box 2921

Safat 13030, Kuwait

Tel: +965 2438269

Fax: +965 2436289

Obituary

Mr. Hugo Scheltema, former ambassador and chairman of IRC's Governing Board from 1984-1994, passed away on 1 September 1996 after a long illness. During his chairmanship he made meaningful contributions to the establishment of the Water Supply and Sanitation Collaborative Council, and had significant influence on IRC's role in the water and sanitation sector. He will be remembered for his charming and stimulating leadership.



New Publications



Toward Participatory Research, Narayan, Deepa. World Bank Technical Paper no. 307. The World Bank, Washington, DC., USA. ISBN 0-8213-3473-5, 265 pp.

This paper is designed as a practical guide to the formulation and implementation of participatory research and inquiry. It contains a wealth of material about the principles underlying participatory techniques, insights gained from the use of such techniques in the field, suggestions about how to best design and implement these methods, and actual participatory activities and checklists which have proven successful.

Section I provides an in-depth examination of essential issues confronting anyone interested in or committed to participatory research. Section II contains detailed information on 33 participatory activities which have been developed and used around the world. Section III has a number of useful checklists the researcher can employ to ascertain information ranging from community economic and social factors to how services are managed by an agency. For more information contact:

The World Bank

1818 H Street, N.W.
Washington, DC 20433
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Tel: +1 (202) 477 1234
Fax: +1 (202) 477 6319
E-Mail: books@worldbank.org

Water Policy: Allocation and management in practice. Howsam, Peter and Carter, Richard, eds. E & FN Spon, London, UK. 384 pp.

Much has been written and discussed about appropriate sustainable water policy options. However, putting theoretical ideas into practice is difficult, in view of the multiple and complex factors involved.

This book examines some of the successes and failures of actual implementation of modern water policy options in the light of the principles and concepts which have emerged from the Rio Earth Summit, the Dublin Statement and other international consensus. It attempts to share real practical

experience at all levels: local, regional, national and international, and emphasizes the cooperation between different professions and sectors that must take place to ensure adequate supplies of fresh water in the future.

The book is a valuable reference work for water and irrigation engineers and managers; academic researchers in water and related sectors; planners, economists, lawyers and policy makers in river authorities and government departments. It forms the proceedings of the 1996 International Conference on Water Policy: Allocation and management in practice, held at Cranfield University, UK.

The publication costs £70. For more information contact:

The Marketing Department

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Tel: +44 (0171) 865 0066

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London SE1 8HN, UK

Upcoming Events

8th International Conference on Rainwater Catchment Systems. Teheran, Iran, 21-25 April 1997

Rainwater Catchment for Survival is the theme of this 8th international conference. Areas of focus, all related to rainwater catchment systems utilization in arid and semi-arid areas, will be technology; management; environmental aspects; socio-economic aspects; progress and innovations; training and innovative extension; and religious and cultural aspects.

There will be plenary sessions, workshops, exhibitions and group discussions. Leading companies, manufacturers, publishing houses, educational and research institutions and various other organizations associated with rainwater utilization, water purification and water treatment will participate.

The conference is being organized by the Ministry of Jihad-E-Sazandegi in cooperation with the International Rainwater Catchment Systems Association. For more information contact:

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WATER NEWSLETTER

Developments in water, sanitation and environment

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NUMBER 246, DECEMBER 1996

Sanitation as a Fundamental Right

In theory, we all know that without adequate sanitation measures, most efforts aimed at the prevention of environmental health-related diseases and at the promotion of human health will fail, especially in the mid- and long term, and eventually will not have the expected impact.

Yet it has to be admitted that in most emergency situations, sanitation problems still last a few months after the outset of the emergency. Let us then recall the key role of sanitation as evidenced through the major consequences of an unsanitary environment, namely:

- contamination of drinking water sources (surface- or groundwater) with liquid and solid wastes;
- swarming of disease vectors such as mosquitoes and flies, whose larval sites have increased both in terms of number and surface area because of poor drainage of domestic wastewater including runoff water;
- infestation of a site or a refugee camp with lice, bugs, fleas and other disease vectors or nuisance organisms because of non-compliance with the basic rules of body and clothing hygiene;
- excessive numbers of rodents which may contaminate and reduce the available food stocks;
- contamination of soil and water with different types of waste including fecal matter, which may give rise to all sorts of helminthiasis, and foster intestinal polyparasitism particularly among children.

Many readers will most likely feel that the above description applies to one, several or even all emergency situations they have experienced.

There is a general consensus on the reasons for which sanitation is not progressing at the same pace as the other sectors. Lack of political will, poor motivation from the staff concerned, either insufficient in number, or unqualified, or both (hence a possible lack of motivation), scarcity of material and financial resources (when

compared to sectors such as health, shelter or water), and lack of community participation. These reasons are frequently put forward in an attempt to explain why so many deficiencies can be recognized when it comes to the sanitation sector.

It is also generally agreed that sanitation is, for the human being, as vital as medical care, water supply and food, especially during emergencies. It is therefore quite amazing that no innovative and effective approach to sanitation problems has yet been proposed, adopted and implemented.

An international workshop on "Sanitation in Emergency Situations" was organized in Oxford, UK in December 1995 to try to define and design such an approach. Specific topics such as excreta disposal, solid waste management, vector control, drainage of domestic wastewater, and body and clothing hygiene were discussed. The one-week seminar was also a good opportunity to discuss more general themes such as: environmental impact of sanitation programmes, sanitation in enclosed centres, community participation, training of staff, as well as project management tools.

Much remains to be done to promote sanitation and get decision and policy makers as well as donor agencies to appreciate how vital this sector is for mankind and to react accordingly. The authors of the articles which follow actively participated in the Oxford workshop and will not question that the workshop was a much-needed and positive step in the process.

Claude Rakotomalala

Claude Rakotomalala is Senior Sanitary Engineer at UNHCR/PTSS, Switzerland.

Note from the Editor

A thanks goes out to all the contributors to this special issue on sanitation in emergencies. Any opinions contained in these articles do not reflect those of the Editor or IRC.



better water and sanitation for a healthy future

Sanitation Installations in Camps in Angola

The Norwegian Emergency Water and Sanitation Preparedness Team (EWSP), which is administered by Norwegian Church Aid (NCA), is the water and sanitation component of the Norwegian Emergency Preparedness System (NOREPS).

In February 1996, NCA was formally requested by UNHCR to construct water supply and sanitation facilities in refugee areas in eight separate areas located in the provinces of Zaire and Uige in northern Angola, and in Moxico province in eastern Angola. In six areas the refugee camps are to receive people coming back into the country from Zaire and Zambia. Additionally, two areas are to receive family members of UNITA soldiers that are to be demobilized.

There are several important differences between the reception centres and the camps for family members. The reception centres are to be used as transit camps and resident time will be limited to only a few days. Refugees will be registered and will get a health check-up. The family camps will house the same people for about six months or until the political process of demobilization is finished. These different resident times intimately influence the type of viable of water and sanitation solutions available. This applies particularly to sanitation.

The work has been ongoing since late March. This is a brief account of what we have done.

The reception centres have been equipped with pit latrines and fitted with proper squatting plates. This allows easy cleaning and maintenance. This solution has been chosen because the latrines are in essence public toilet facilities which will be used by tens of thousands of people in the course of the camp's existence. Because of this transience the people will never treat them with a sense of ownership, and one cannot expect them to clean and maintain them properly.

The family camps are different because the families are to build their own houses and related infrastructures. This includes sanitation facilities where families have been encouraged to build their own latrines with local materials. Squatting plates or other modular solutions for sanitation have therefore not been used, even though a supply of squatting plates has been maintained for quick implementation if needed.

Another important aspect of sanitation construction is where the facilities are placed. A case study from a family camp in northern Zaire that initially used ditch latrines illustrates this. The ditch latrines were too far

removed from the residence area, and people chose to relieve themselves in other areas rather than walk all the way to the latrines. If latrines are placed far away to minimize their negative effects, they will not be effectively used or maintained.

Placing the latrines closer to the user may stimulate the refugees to use them, but proper instructions on how to use and clean the facilities is the key to improved hygiene. It is therefore extremely important to follow up with strict control and education efforts. If this is practiced in the camps, the hope is that the improved hygiene behaviour will stay with the refugees when they finally return home.

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Rapid Watsan Survey in Sudan

MSF-Holland (Médecins sans Frontières) has been working in Sudan for many years. One of its programmes aims at constructing family latrines and providing water by handpumps in three displaced and resettlement areas around Khartoum. This programme has been running for four years. In June a rapid water supply and sanitation survey was carried out in each of the areas to measure its impact.

The aim of the survey was to assess the access of the population to water supply and sanitation facilities. A questionnaire was made to collect data on family size, place of defecation, water quantity used and water sources. The methodology chosen was based on the *rapid nutrition survey*, a technique used by MSF to assess the nutritional status of a population.

In each area an existing subdivision (in blocks or sections) was selected and the population was estimated per subdivision. Thirty clusters were located in the area according to the population density, i.e. in highly populated subdivisions more clusters were located than in less populated subdivisions. Within each cluster 28 families were selected at random and interviewed. A total of 780 families interviewed per area provides a statistical representative sample with an error risk of 5%.

The survey was executed by the MSF hygiene educators. Beforehand, a half day of training was given explaining the reason for the survey, how to select the families and how to fill in questionnaires. The training was completed by interviewing a number of randomly selected families

together with the hygiene educators. Then, the hygiene educators went out in teams of two to conduct the survey. Each team interviewed 40 - 50 families daily and within three days the survey was completed. The data were processed with the statistical programme *EPI-info*.

The survey showed that in the areas where MSF maintains handpumps, each family collects 15 - 20 litres of water per person per day. About 90% of the water is collected from handpumps, about 10% is bought from commercial water sellers. With regard to latrine coverage, the survey showed that the percentage of families with a latrine was in reality 10% higher than would have been expected based on latrine production and population figures. This higher percentage is probably because the population figures used before were inflated and latrine production was calculated by adding the monthly production figures over the past four years (with risk of errors). About 15% of the families claimed they used a latrine even when the family itself did not possess one.

The survey showed that water supply is sufficient in the areas where MSF is responsible for maintenance. There is no urgent need to install more handpumps but the programme should pay attention to establishment of a sustainable maintenance system. In two areas 60 - 70% of the families own a latrine. Based on these results it is planned to continue the present programme for another year. By the end of 1997 sufficient coverage will be reached and the programme in these areas can be scaled down. In the third area, latrine coverage is much lower and the latrine construction programme will have to continue for at least two more years.

The methodology used is particularly useful to plan and evaluate water and sanitation in emergencies, since with simple questionnaires, a reliable survey can be completed rapidly. Evaluation of the results is relatively easy with the help of statistical programmes like *EPI-info*. In the future MSF hopes to use the same methodology to evaluate the health impact of water supply and sanitation programmes by asking questions on water and sanitation facilities and on water supply and sanitation-related diseases. The same methodology could also be used to quantify specific needs or to compare different emergency-related projects.

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Solid Waste Collection and Disposal in Refugee Camps

In the past the collection and disposal of solid waste in refugee camps has often been ignored. There are two main reasons for this: historically solid waste has not been perceived as a problem, it mainly consisted of small quantities of ash and other inorganic waste, and few support agencies have been willing to become involved.

Recent changes in the focus of refugee support to communities in Eastern Europe and Central Africa have changed this situation. The increased use of packaged goods and disposable items has led to an increase in the demand for solid waste disposal systems.

This article will look at the general principles and problems of solid waste collection and disposal within a refugee camp. It will not cover the special problems involved in the disposal of medical waste.

Why collect solid waste?

Decomposing organic waste attracts animals, vermin and flies, which may act as reservoirs and vectors for many diseases. In addition, rain-soaked waste will act as a breeding ground for mosquitoes.

Rubble from demolished buildings after a war or natural disaster is also a form of solid waste which may restrict movement around an area. Damage done by floods or high winds may result in debris containing considerable organic matter and possibly dead animals.

People forced to live in unhygienic and untidy surroundings are likely to become demoralised and less interested in improving their condition.

Solid waste management

The removal of solid waste falls into three distinct phases: storage, collection and, disposal. The technologies and methodologies involved are well documented by authors such as Davies and Lambert (1995). The techniques are briefly described below.

Domestic and institutional waste should be stored for collection no more than 50 metres from the generation point. Oil drums cut in half and plastic bags are frequently used for this purpose. Hazardous waste such as old medicines, used needles, and soiled bandages should be stored separately in a secure place to prevent theft or cross contamination. Public education is necessary to ensure that domestic waste is disposed of properly.

A wide variety of vehicles have been used for waste collection depending on the size of the problem, finances and available technology. As a general rule keep the system simple and expand on existing facilities rather than introduces something new. The period between collection varies according to the volume of waste generated, its type and the climate. It is generally between a day and a week. There are a number of ways that the waste can be disposed of. In emergencies the most appropriate is usually sanitary land fill.

Problems

Solid waste management systems frequently break down, mainly due to problems of finance and management. In refugee camps these can be summarized as follows.

Responsibility for waste collection and disposal must be clearly defined. All groups must know where that responsibility lies and what type of service is being provided.

In urban areas there is normally a waste management system already in operation but it may not be operating effectively because of lack of resources. Building rubble may be removed by householders or a central organization. In refugee camps there may be no existing effective refuse management organization. Historically NGOs have not been involved in this area possibly because it has not been a problem, they do not have the skills or it does not appear attractive.

Most aid agencies involved with refugees do not have the skills to operate and manage a solid waste collection and disposal system. A significant training input will be required if they are to become involved in this sector in the future.

Unlike many other forms of intervention solid waste management problems increase with time rather than reduce. Any agency involved must be committed to the sector for a considerable period if they are to succeed. In the end however the system will have to be operated by the community. It is important therefore to ensure that any system introduced is affordable by the recipient community.

Reference

Davies, J.; Lambert, R., 1995. *Engineering in Emergencies: A practical guide for relief workers*. IT Publications, UK.

Emergency-Related Research Activities at WEDC

Rapid appraisal of emergency water supplies

WEDC (Water and Engineering Development Centre) at Loughborough University is currently researching ways of improving the provision of water supplies to refugee camps. The work, funded by the UK Overseas Development Administration, is developing guidelines for selecting the best water source(s) and suggesting the most appropriate treatment processes required to make the water potable. At the end of the 2 1/2 year project a set of guidelines and training modules will be freely distributed to agencies working in the sector.

Rapid appraisal of emergency sanitation

Proposals have been made to develop guidelines for the selection of the most appropriate sanitation system for a refugee community. The guidelines will include details of technical options, implementation procedures and hygiene education tools. The project is being supported by a number of the major aid agencies and is designed to supplement research carried out by others.

Further details about all these projects and the solid waste collection and disposal article on the previous page can be obtained from:

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Improving Current Approaches to Vector Control in Emergencies

The following is a summary from an article written for the Oxfam Workshop "Sanitation in Emergency Situations" held in Oxford, UK in December 1995.

The environment in a refugee emergency or the breakdown of sanitary services following a natural disaster often result in conditions ideal for the propagation of insects and rodents, exposing the population to diseases carried by them. Limited opportunities and facilities for personal hygiene combined with extreme overcrowding exacerbate these problems dramatically. Long-term prevention is the most effective method to control vectors. However, in an emergency these methods need to be supplemented by chemical control techniques to prevent disease outbreaks.

Major Considerations in Planning Vector Control Programmes

Before planning vector control programmes, several points must be considered.

- The type and species as well as the prevalence of existing vectors must be assessed.
- The type of vector control programme required must be determined. Chemical control should only be considered as a supplement to good environmental health practice such as the removal of breeding sites, improved environmental sanitation and appropriate health education. With the threat of an epidemic the principle approach may be to obtain a rapid and maximum control of vectors.
- Availability of equipment and insecticides must be investigated; local advice must be sought; chemicals requiring professional operators should be avoided; chemicals should undergo vector susceptibility tests; the use of different chemicals should be rotated over long periods; and there should be good coordination with national vector control programmes.
- The type of target site should be determined. This affects the insecticide treatment, for example, whether targeting vector breeding areas or resting and feeding sites.
- The treatment cycle required varies depending on the vector species, insecticide type and formulation, type of site under local climatic conditions, disease transmission period and the level at which diseases are to be controlled. Similarly the suitable insecticide mix depends on the chemical concentration required to kill the vector, the emulsifiable concentrate of the commercial formulation, and the rate of the chemicals application.
- Health and safety requirements are important. Great care must be taken to ensure careful choice, handling and use of chemicals is vital to avoid injury to operators and community members.

Regular monitoring prior to initiating the control programme and follow-up to assess its effectiveness and the need for further treatment, (including the role of the community) are necessary. Information campaigns must inform the community of methods, expected outcome and the role they need to play.

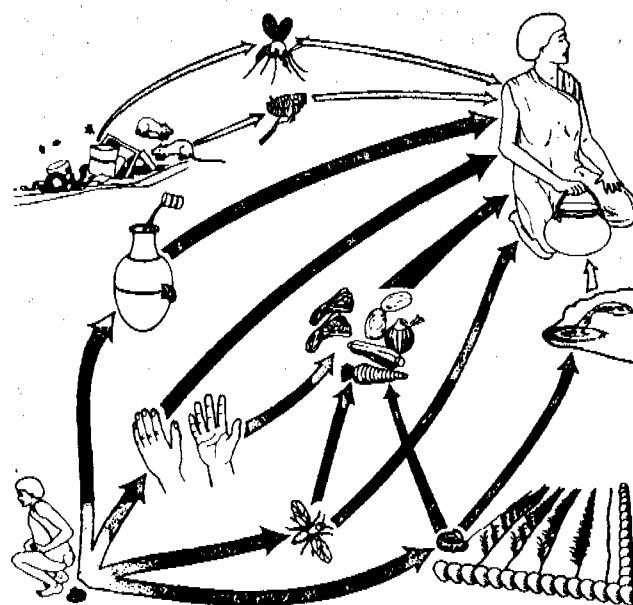
Effective implementation of vector control programmes

To ensure the effective implementation of vector control programmes, the following key issues need to be addressed.

- NGOs need to employ sanitation coordinators with specialist knowledge and make suitable reference material available. Developing an effective vector control programme in the field requires a detailed understanding of disease transmission, basic entomology and vector identification, insecticides and

chemical selection and use, knowledge of application equipment, and health and safety requirements.

- Chemicals must not be seen as a 'cure all'; careful planning for chemical use to ensure appropriateness, utilizing epidemiological data and monitoring of vector levels is vital.
- Sanitation Coordinators need to be trained in vector assessment and monitoring, and be aware of when and how to get specialist advice.
- There needs to be greater understanding of all the factors influencing insecticide effectiveness to avoid vectors rapidly developing resistance to chemicals, or inadvertently creating a hazard through use of unnecessarily high concentrations.
- Effective training of spray operators is essential for programme success.
- Health and safety requirements must not be neglected, 'developed world' standards of protective clothing for operators, training and hygiene as well as public and environmental protection need to become routine in programme development.



Important disease transmission routes related to poor environmental sanitation

Source: Davis, J.; Lambert, R.; 1995. *Engineering in Emergencies: A practical guide for relief workers*. IT Publications, UK

Organizations need to consider developing emergency kits for vector control to avoid utilizing sub-standard local chemicals and inappropriate equipment. Insecticides used during emergencies should be standardized and all supporting chemical data made available, streamlining stocks and the information needed.

Recommendations

For emergency situations, the following recommendations are made:

- 1) A standard training programme and 'user friendly' practical field guide specifically for vector control programme managers and sanitation coordinators needs to be developed.
- 2) Good technical reference material needs to be made available by NGOs to staff.
- 3) Standard supply of chemicals, equipment and clothing needs to be available to operational NGOs.

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Call for Information

Has your organization recently carried out evaluations of water supply and sanitation programmes following a humanitarian disaster, either in the immediate emergency phase, or the rehabilitation period?

If so, please send a copy of the results for inclusion in IRC's extensive documentation unit. A listing of the reports compiled will be forwarded to all those who respond. Please send your report to David Saunders at IRC, or e-mail to saunders@irc.nl.



New Video

Sanitation in Emergencies is the title of a new half-hour video prepared by Tom de Veer and distributed by IRC. The English-language video uses a Rwandan camp as an example to cover all the major issues that should be included within sanitation programmes for refugee camps. The video may be used as a stand-alone advocacy tool, or used to introduce or familiarize inexperienced staff as to the number and variety of issues that need to be addressed when tackling sanitation programmes in camp situations. The video costs US\$ 25 including postage and can be ordered from IRC. Please specify NTSC or PAL.

New Publications

Engineering in Emergencies: A practical guide for relief workers. Davis, Jan and Lambert, Robert. IT Publications, London, UK, 1995. ISBN 1 85339 2227. 736 pp, illustrated.

The book aims to increase the effectiveness with which engineers and other relief workers can provide humanitarian assistance during an emergency. To achieve this the book provides practical information relevant to the practitioner in the field with a minimum of supporting theoretical background.

It aims to provide engineers working outside their area of speciality with practical information, rather than providing highly specialized information to those already experienced in the provision of humanitarian assistance. In addition to detailed technical information, it deals with the wider nature of emergency and gives a brief outline of the international relief system. Practical guidelines are provided on assessment, planning, management and personal effectiveness.

Reflecting the experiences of relief workers, the accessible and practical book sometimes takes a panoramic view, for example, of planning for a refugee camp, and sometimes gives highly detailed information - for example, of the installation of an electric submersible borehole pump. Standard engineering information is selected and adapted for use in emergencies.

Engineering in Emergencies costs £ 18.95/US\$ 36.50 and can be obtained from:

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