

The Local Decade

MEN, WOMEN AND AGENCIES IN
WATER AND DEVELOPMENT

Report on the international symposium to support the
international drinking Water Supply and Sanitation Decade



INTERNATIONAL REFERENCE CENTRE FOR COMMUNITY WATER SUPPLY AND SANITATION

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THE LOCAL DECADE:
MEN, WOMEN AND AGENCIES
IN WATER AND DEVELOPMENT

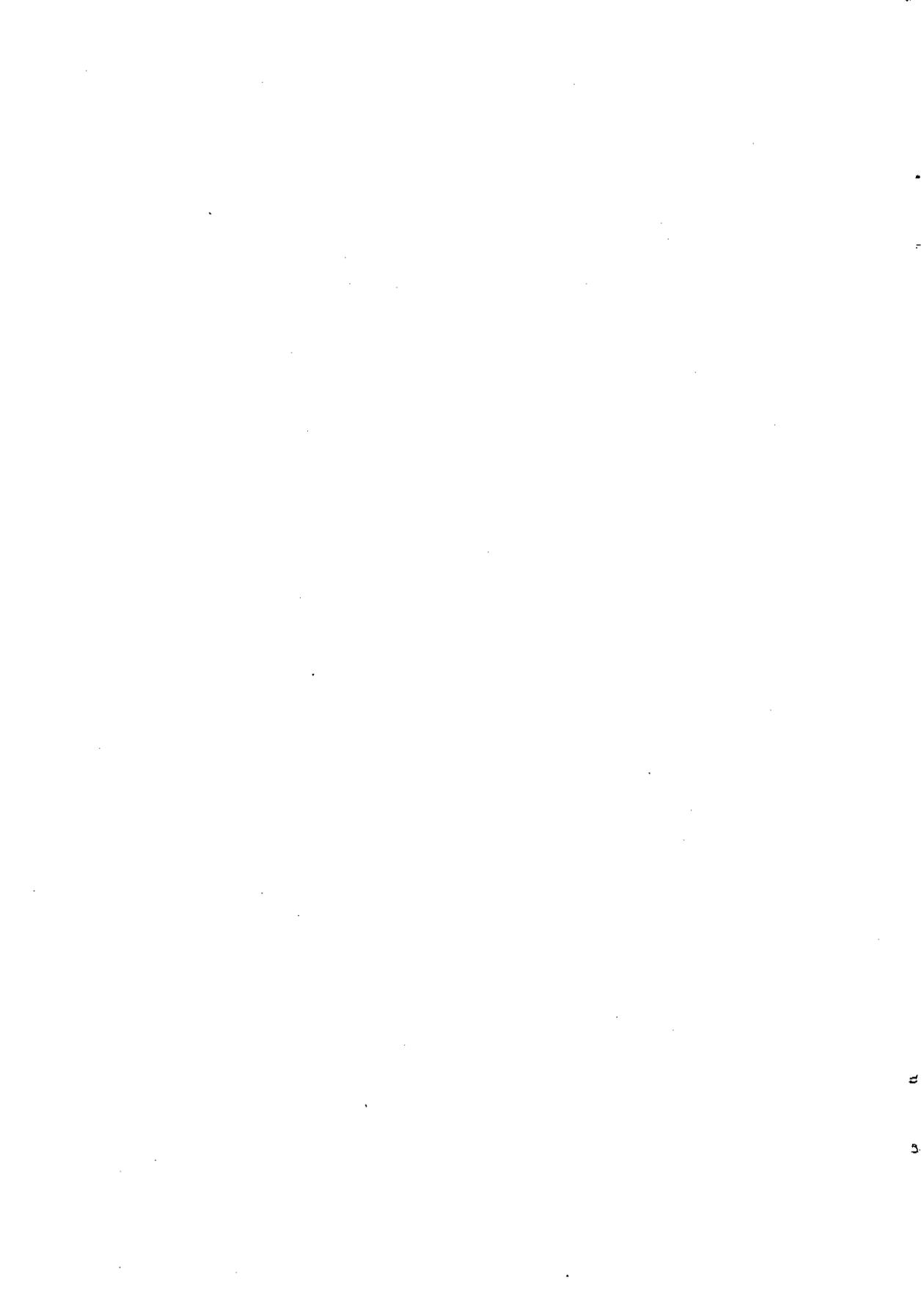
REPORT ON THE INTERNATIONAL SYMPOSIUM TO SUPPORT THE
INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

ORGANIZED BY
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FOR COMMUNITY WATER SUPPLY AND SANITATION

WITH SUPPORT OF
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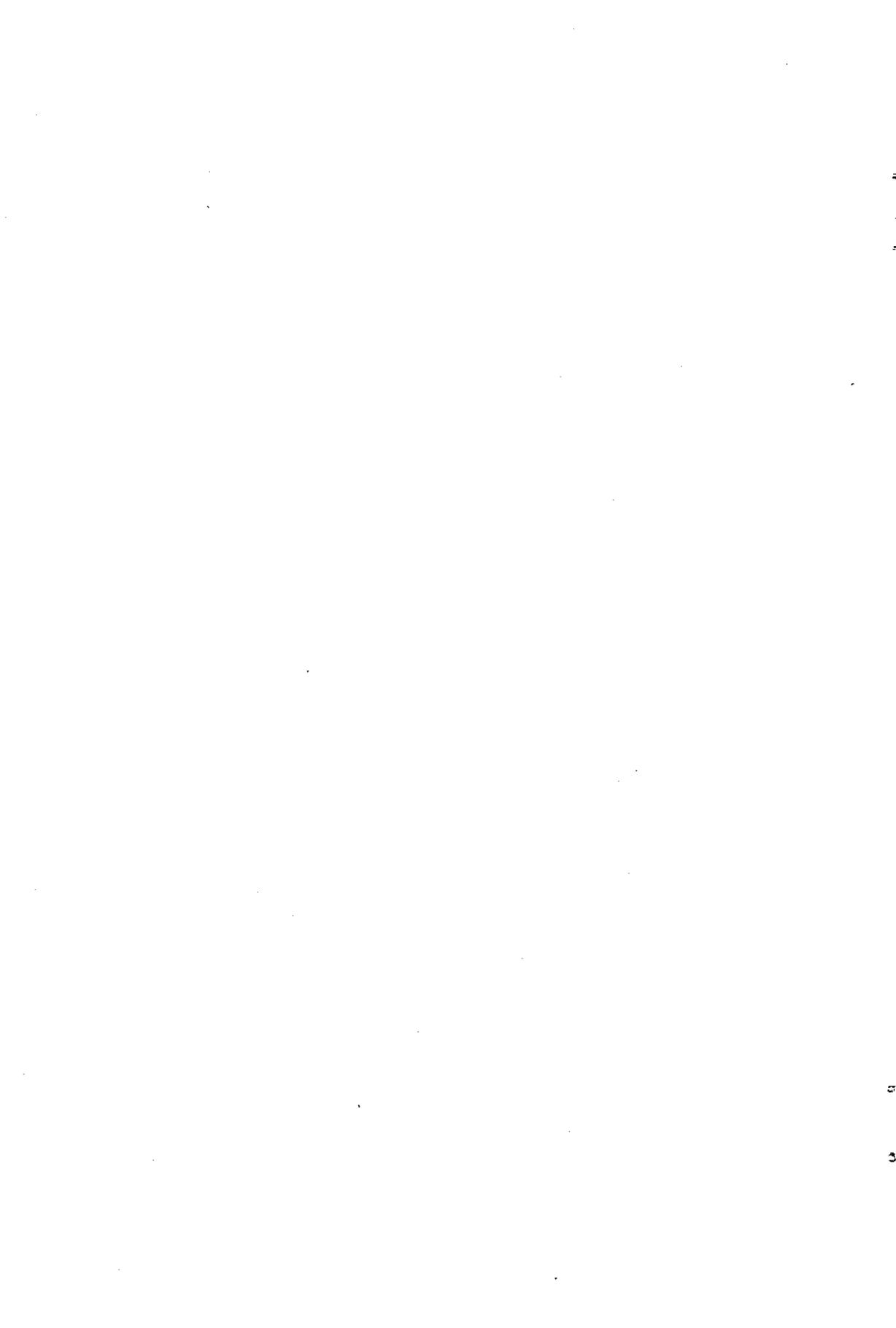
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CONTENTS

Preface	v
Summary by the Chairman	vii
Chapter 1. Introduction	1
2. Conclusions and Recommendations	3
3. Symposium Organization	7
4. Report on Working Group I: preparation and initiation of projects in the community	9
5. Report on Working Group II: local organization and maintenance including selection of technology	13
6. Report on Working Group III: hygiene education	17
7. Report on Working Group IV: local management including finance and income generation	25
Appendix I Water and Women, opening address by Mrs E.M. Schoo, Netherlands Minister for Development-Cooperation	33
II Keynote Address by Dr L.A. Kaprio, Regional Director, WHO European Region	35
III Message from Mr G.Arthur Brown, Chairman Steering Committee for Cooperative Action of the International Drinking Water Supply and Sanitation Decade	37
IV The Delicate Balance between Community Contribution and Agency Support, presentation by Mr L.A. Lawson, National Water Commission, Jamaica	41
V Women, Water and Waste: Keys to Integrated Development, presentation by Ms M. Elmendorf	49
VI Case Studies on Community Participation Especially Women in Water and Sanitation Projects	59
VII List of Participants	75



Preface

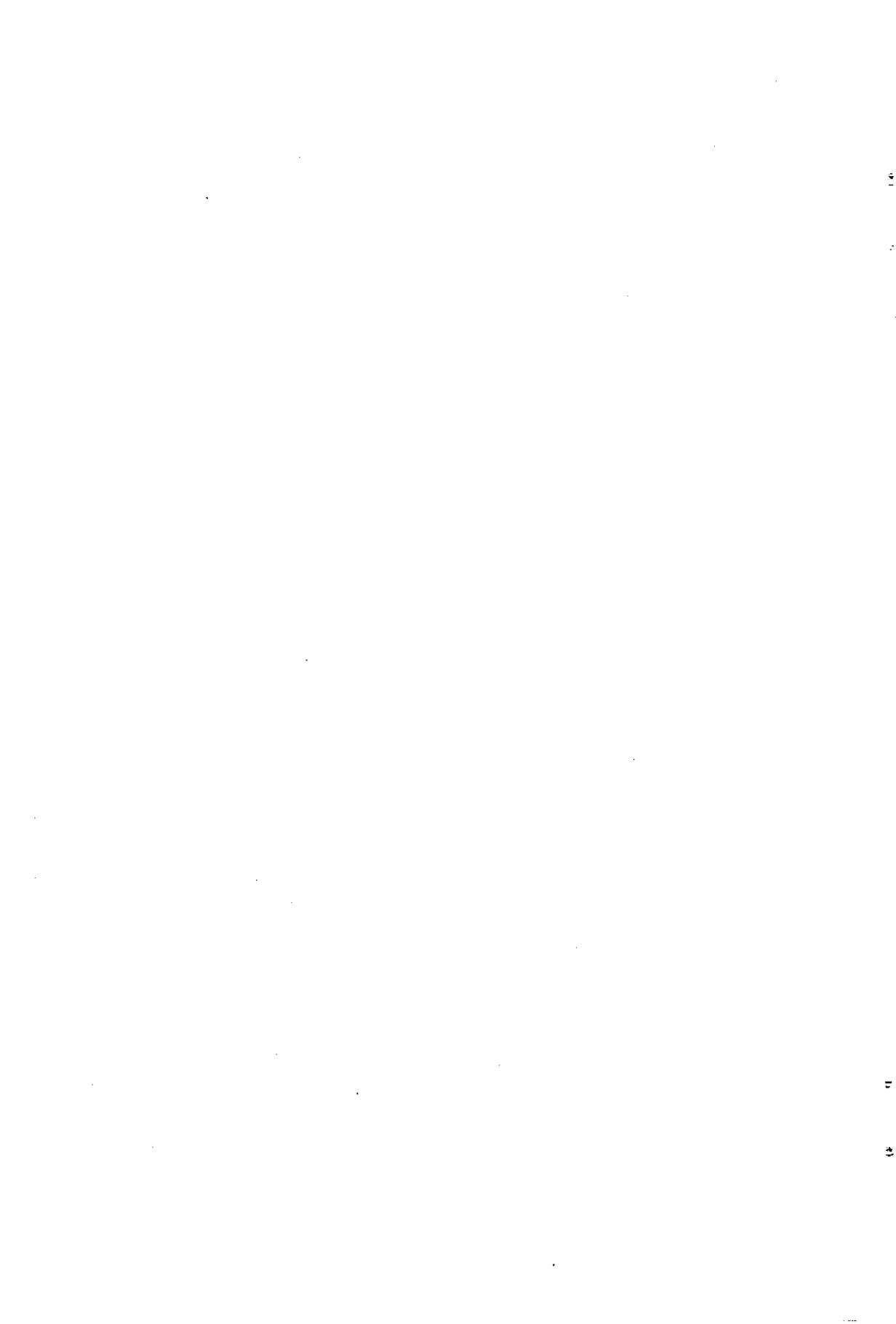
This is the report on the international symposium held in Amsterdam on 20-22 June 1984 in support of the International Drinking Water and Sanitation Decade and also to mark the 15th anniversary of the establishment of the International Reference Centre for Community Water Supply and Sanitation (IRC). The symposium was supported by the Netherlands Minister for Development Cooperation.

The starting point for the symposium was that a balance between local community involvement and agency support is essential to the success of water supply and sanitation projects and programmes. Not only the community as a whole needs to be considered but also due attention must be paid to the interests and potential of local women, because they are most directly concerned with water and sanitation as users, educators of children and protectors of family health. Hence the symposium was entitled "The Local Decade: men, women and agencies in water and development".

More than 30 people from 14 countries attended. They included representatives from national and international agencies; from government and non-governmental organizations; engineers, social scientists and health experts; field-workers and desk-workers and those who do both.

A preliminary draft was prepared at the end of the symposium and provided to the participants. This final report has been prepared on the basis of their feedback. It contains a summary of the findings and recommendation of the working groups which considered the themes: preparation and initiation of a project in the community; local organization and maintenance including choice of technology; hygiene education; and local management including finance and income generation.

On response to interest in this topic it has been decided to prepare a publication for wider distribution in which the recommendations of the symposium are illustrated with case studies from the field. This publication is scheduled to be published in the third quarter of 1985.



Summary by the Chairman

The Symposium supported by the Netherlands Minister for Development Cooperation has been organized to honour the occasion of the 15th anniversary of the establishment of IRC, and to support the activities of the International Drinking Water Supply and Sanitation Decade. Aware of the importance of community participation, particularly the vital role of women, 35 experts from 14 countries met at the Royal Tropical Institute to share their personal experiences and to recommend practical steps which need to be taken urgently, if the hopes of the Decade are to be attained.

Participants have stated emphatically that success cannot be achieved without a meaningful partnership with the millions of people still suffering from shockingly high levels of disease related to inadequate water supply and sanitation services. Furthermore, participants have stated in the strongest possible terms that such partnerships cannot consist of token involvement, token participation by women, token decision making by community representatives. Government and non-governmental agencies can no longer ask communities to participate in their projects, but need to listen to communities, to understand their needs, to respond to their priorities. Women in particular must be involved in the various phases of project development and implementation.

Clean and adequate amounts of water are essential for health. But often abundant water is not sufficient to protect health and prevent premature death. Participants agreed that improved environmental sanitation, including hygiene education, requires additional priority and resources. A careful balance of these elements, organized within the broader framework of primary health care and community development, and also integrated rural development, offers the best chance to improve the quality of life of those who are desperately in need of these services.

Resources in less developed areas of the world are scarce and may become even scarcer. Participants recognized that existing community organizations and institutions must be used to the fullest because it is not possible to establish entirely new structures. Many suitable structures exist, for example, villages committees, mothers groups, school groups, local banks, cooperatives, religious groups, and private voluntary organizations.

Imaginative ways are called for to make full use of these resources, to increase understanding of and the value given to water and sanitation. In addition, new ways are required to generate modest amounts of income to maintain these systems which were planned with local participation, constructed with the aid of the community, maintained by locally trained men and women, and used by those who understand their benefits.

Many constraints must be overcome, which are similar to those faced by health and development workers throughout the world: lack of understanding, not only among villagers but also government leaders: overemphasis on quick technological solutions, when more patient and more long-term approaches are required; unrealistic expectations about contributions from local volunteers whose initial enthusiasm cannot be easily sustained; and reliance on traditional "top-down" approaches which have only limited relevance to the problems in hand.

Participants have shared many of their experiences drawn from years of work in villages and service agencies. They have reported encouraging successes in water and sanitation programmes in which, in many cases, women have an important part. Participants concluded their work at this symposium with the hope that the practical insight and recommendations which they have made will contribute further to the realization of improved water supplies, sanitation, and hygiene for the people of the world.

H. Scheltema
Chairman

1. INTRODUCTION

The key to the success of community water supply and sanitation projects lies in a well-balanced relationship between the functions carried out by the communities and the support from higher-level organizations, such as water and health departments, non-governmental organizations (NGOs), and donor organizations. This was the starting point for the international symposium "The Local Decade, Men, Women and Agencies in Water and Development", which was held in Amsterdam from 20 to 22 June 1984. With support from the Netherlands Minister for Development Cooperation, the International Reference Centre (IRC) for Community Water Supply and Sanitation organized this symposium to mark the 15th anniversary of its establishment and to support the activities of the International Drinking Water Supply and Sanitation Decade.

Projects which only provide services to the people without involving them have failed too often. Frequently facilities are not used, or agencies cannot maintain the services which they have pledged to give. On the other hand, the burden for communities to maintain completed facilities is also often underestimated. The present emphasis on community participation carries the risk that only demands are made on the people, without at the same time adapting the water agency's approaches and support services to meet community needs.

Striking a balance is not easy. Not only must the resources of the community as a whole be considered, but also special attention paid to the interests and potential of local women. They are most directly concerned with water and sanitation, as users, educators of children, motivators of household changes, protectors of family health, and contributors to the household economy (vegetable growing, cattle and poultry raising, etc.). They should, therefore, be closely involved in planning and implementation of local drinking water supply and sanitation projects. This in turn will help women to gain more respect and to become more valued members of their communities, and also to enhance their self-awareness and their position in society.

In order to bridge the gap between broad generalizations on these issues and practical requirements in the field, the symposium was organized with the following objectives:

- to review experiences on the balance between local contribution and higher-level support to drinking water supply and sanitation projects, in particular local responsibilities and rights, and their consequences for project agencies;
- to identify constraints to and practical ways as to how women can be involved effectively as an integral part of the community in the planning, operation, maintenance, use, and evaluation of water and sanitation systems;
- to identify gaps in existing knowledge and experience; to formulate options for practical experiments, research, and development; and to suggest ways to incorporate these in ongoing, planned, and new programmes.

2. CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of each working group are summarized under separate chapters. Those which were singled out for discussion at the final plenary session are set out in this chapter.

2.1 Programme Level

2.1.1 Objectives

In order to achieve the fullest impact on the health and socio-economic conditions of communities served, with optimal use of the limited means available, water and sanitation projects should take into account the broader framework of primary health care¹⁾ and community development. This will provide sufficient scope for full community participation, including hygiene education to improve the community health status.

2.1.2 Implementation targets

Implementation targets should be set and budgets prepared taking into account time, money, and human resources required for community participation to avoid project failure because of lack of community involvement.

2.1.3 Coordination

Every effort should be made to coordinate the work of government agencies at national and district levels. This is best done by emphasizing coordination at the local level. Coordination is also necessary between governments and donor agencies to avoid duplication of efforts.

2.1.4 Participation of women

In recognition of their vital role as users, managers, acceptors and agents for change in water supply and sanitation, women should be involved in Decade activities at all levels. In order to guarantee that the key roles of women at the local level are recognized, promoted and supported, commitments should be made to facilitate their active participation in national and international support activities, including policy development and decision making, project preparation, planning, implementation and management, monitoring and evaluation, advisory consultancies, community development, and health education. This may help ensure that the participation of women is an integral part of community water supply and sanitation activities at the local level from the beginning.

1) Primary health care is concerned with the promotion of individual and community responsibilities for health, as an essential complement to the health system.

2.1.5 Full coverage of unserved communities

At national level, the water supply and sanitation needs of three main groups: the urban poor, concentrated rural population and scattered rural population should be considered equally, appropriate solutions and agencies identified, and areas of cooperation and coordination defined. To achieve full coverage as rapidly as possible, every opportunity should be taken to encourage local initiatives. Attention must be given to the search for appropriate finance for these initiatives.

2.1.6 Staffing

Programme planning and timing of the activities should take into account the availability of human resources at all levels and include strategies for human resources development.

2.1.7 Allocation of project resources

Strict criteria should be established to enable agencies to respond to actual needs rather than personal influences.

2.2 Community level

2.2.1 Local planning

A basic condition for the success of a project is that the community perceives the need for it. Informal consultation with a broad spectrum of community members, including formal and informal leaders, women and men, is more effective than questionnaire surveys to establish whether the community perceives such a need.

The agency's terms of reference should include community involvement in the feasibility study stage and in subsequent decision-making. Dialogue and joint decision-making with the community are required in particular with respect to:

- the communities' knowledge of the water and sanitation aspects of the environment, for example, floodings, droughts;
- social, cultural and religious preferences and/or constraints;
- needs for and envisaged uses of the water to be supplied, for example, bathing, animal watering, and irrigation;
- estimated costs of the options being considered;
- the capacity and willingness of the community to contribute to capital and/or recurrent costs, including proportional contributions to recurrent costs by commercial users.

The following ways are suggested to involve women as main users and decision-makers on water and sanitation within the family:

- to work through existing structures (women's organizations, religious groups, etc.) and at the same time to involve men;

WATER SUPPLY AND
SANITATION CENTRE

- to give advance notice to women's organizations so that they can alert women of the community for future mobilization;
- to arrange that time and venue of meetings and events are conducive to their attendance;
- to encourage active participation of women in discussions during consultations;
- to educate executive agencies (technical teams, donors) to the importance of having women identify their needs;
- to use female staff and volunteers to liaise with women;
- where necessary, to organize separate meetings with women, and to involve local key women;
- to consult women on those issues concerning them directly, for example, location, design, and upkeep of facilities.

2.2.2 Minority groups

Attention should be paid to the involvement of minority groups which tend to be excluded from decision-making.

2.2.3 Maintenance

Important criteria in the selection of technology are operation, preventive maintenance and repair. These should be decentralized, wherever possible. Caretakers or operators should be selected in consultation with the community, and paid and supervised by a committee. There is a strong case for the appointment of women, who are more likely to remain in the community, and to remain interested in this type of part-time work. Logistic support to communities is essential, for example, to ensure provision of spare parts.

2.2.4 Hygiene education

Hygiene education should be adequately funded, and should be a dialogue between the community and outside agencies. Hygiene education should be designed to improve family health with regard to water and sanitation. The family should be the focus of such education, but separate dialogues with men, women and children may also be necessary. Women, having a focal position in the family, should play a central role as motivators and educators.

2.2.5 Financial management

Local artisans and entrepreneurs, women and men, have roles to play in many community water supply and sanitation systems. They can be trained to produce standardized units and spare parts, such as, latrine slabs, rain-water collection tanks, and collection and storage vessels. While generation of income in communities is very important, it is not appropriate for water and sanitation agencies to promote activities to generate income which are outside their sector. Technologies should be appropriate to existing levels of income.

2.2.6 Evaluation and monitoring

Evaluation should be an integral part of water and sanitation programmes, and concentrate on the proper functioning and use of facilities. It should not be fault-finding but aim at improvements. A good but simple monitoring system at community level will facilitate periodic evaluations by the agency. The results of evaluation should be fed back to the community, through the committee.

3 SYMPOSIUM ORGANIZATION

Thirty-five participants from 14 nations attended the symposium, and also representatives from United Nations agencies and non-governmental organizations. Participants had varied backgrounds, including social sciences, engineering and health, with a strong emphasis on field experience (for a list of participants, see Annex VII). The deliberations were conducted in plenary and working group sessions, with public opening and closing sessions.

In his welcoming speech, the Symposium Chairman, Mr. H. Scheltema, former Ambassador, and Chairman of IRC, stressed that this international symposium was held to support the International Drinking Water Supply and Sanitation Decade.

Mrs. E.M. Schoo, the Netherlands Minister for Development Cooperation, in her official opening speech set the tone by stating that in view of the time and labour spent by women in developing countries to secure water, priority should be given to their role in water supply programmes. Women should be involved in all phases of project development and implementation. The Minister explained the recently published changes in the government's bilateral aid policies, to give much attention to integrated rural development, at the very heart of which are water supply schemes. Further, she stated, that carefully integrated water supply programmes can be vehicles for increased involvement of women in development. Mrs Schoo also stressed the need to assist women to organize, and to listen to them and to assist them to seek the best technical, economic and social solutions, and to involve them in the maintenance of activities and programmes.

Dr L.A. Kaprio, Director of the WHO European Region, spoke on behalf of Dr H. Mahler, Director-General of the World Health Organization, who was unable to attend the meeting. Dr Kaprio described IRC as a valuable technical resource and called for strengthening of WHO and IRC efforts to promote successful technologies, ideas, and institutional developments. He also stressed the importance of community participation, and through it, acceptance of appropriate technology. In water supply and sanitation, more than any other single development sector, the role of women is of paramount importance.

Dr. Kaprio concluded by congratulating IRC on its productive youth, early maturity, and worthy independence.

In a message read out by Dr P. Lowes, UNDP/WHO Coordinator for the Water and Sanitation Decade, Mr G. Arthur Brown, Chairman of the Steering Committee for Cooperation Action for the Decade expressed his regret at not being able to join in IRC's 15th anniversary celebrations. Mr Brown, speaking on behalf of all 11 member agencies represented on the Steering Committee, wished IRC a long and effective life. Further, he said that the Steering Committee applauds IRC's efforts and the generous support of the Netherlands Government to IRC.

To end the public session, two talks were given to the more than 100 participants to introduce the work in the smaller working groups. Mr L.A. Lawson, Director of Engineering for the National Water Commission in Jamaica, drew on his 23 years of field experience to stress that the delicate balance between community contribution and agency support varies from country to country, and also within each

country depending on the type of community involved. He described efforts made in Jamaica to achieve this delicate balance, including the adoption of a flexible attitude and preparedness to adjust programmes to accommodate the needs and wishes of individual communities. Information is obtained from local inhabitants at the initial development stage. The established policy is that during the construction stage, labour for the project must be engaged locally. Local operators are employed and a promotion and information programme is provided to customers. He concluded with a word of warning that these efforts represent Jamaica's hopes and aspirations for water supply rather than being a success story.

Mrs M. Elmendorf, Consultant in Applied Anthropology, addressed the issue of "Women, water and waste; keys to integrated development". She stressed that the women, through participation in improvement in water and sanitation facilities can become key parts of integrated community action for social and behavioural changes to increase the health impact, and simultaneously, the quality of life for their families. Mrs Elmendorf made a strong plea for an integrated approach to women, health, and development and for linkages between women, water and sanitation with other sectors, such as, rural development, nutrition, and income generation.

After the public opening session, participants listened to four successful cases of community participation from India, Nigeria, Pakistan, and Tanzania (see Annex VI). The participants then divided into four working groups to discuss the following themes:

- preparation and initiation of a project in the community;
- local organization and maintenance, including choice of technology;
- hygiene education;
- local management, including finance and income generation.

Each theme served as an entry point for discussion of the general topic, the balance between the community contribution and agency support to drinking water and sanitation projects, in particular the involvement of women. The reports of the working groups, and the final conclusions and recommendations, were agreed upon by the symposium in a plenary session which was followed by public discussion. The symposium concluded with an official reception to mark on the occasion of IRC's 15th anniversary.

4. REPORT ON WORKING GROUP I: PREPARATION AND INITIATION OF PROJECTS IN THE COMMUNITY

4.1 Policies

It was recognized that new water supply and sanitation projects should be planned within the broader context of community and national activities. At a local level, specific objectives for water supply and sanitation programmes can only be formulated through active community involvement of both women and men. Objectives need to be defined in concrete terms for specified periods of time. Only a broader context will enable the setting of realistic targets which take account of the longer period of time required for community involvement. Making improved public health the policy goal for water programmes will prevent programmes from evading practical linkages with sanitation, health education and community and women's involvement. Coordination of efforts of government agencies at national and district levels is always desirable, and continued efforts must be made to achieve this.

Local-level initiative and community adoption of a specific project may stimulate supportive and coordinating action by ministries. Intermediate women's organizations may function as catalysts at both local and national level.

In general, approaches should be flexible and suited to local conditions.

Of particular importance is the assurance of financial capability for continued operations and maintenance of the improvements. In some instances, NGOs may be specially helpful in using government funds to reach needy groups.

4.2 Programme planning

Most programmes are planned "top down". There are instances of "bottom up" planning, but unfortunately these are few. Finance, political preference, social attitudes to women and lack of trained personnel, are major constraints for "bottom up" planning of projects. Partnerships are not achieved by external donors who exercise control but dodge long-term responsibility. Genuine partnership is rare. To promote such, full mobilization of the community and government willingness are essential. One way of achieving this may be to have government officials live and work in villages for a period of time.

Strong non-governmental organizations, women's groups, and church groups, can assist to mobilize and express community concern. Even though theoretically represented, women, in fact, remain underrepresented in many instances. Special efforts need to be taken to correct this by:

- encouraging women to attend meetings which should be organized at times and places suitable to them;
- providing ways for women's groups and organizations to express their concern, and their opinion to be listened to and included in planning;
- helping women to make their opinions known by, for example, special training, and raising points of women's concern in meetings;

- providing finance to initiate projects which focus on women;
- raising awareness in the community and in executing agencies on women's potential and actual roles in water supply and sanitation.

Workshops at national and district level, including field trips to specific projects are a useful means to orient policy makers, planners and other staff to the advantage of community involvement, particularly women, in water and sanitation programmes.

4.3 Identification of community needs

Identification of needs by both men and women is important because interests may differ and may even conflict. Attempts by outside groups to define community needs by questionnaires and surveys may be counterproductive. It may be more useful for local groups to involve men and women to express concern and willingness to act.

"Felt needs" present a dilemma. When the expressed needs of the community differ from those seen by the outside agency, whether government or non-government (sanitation and health education are seldom felt as 'needs' by the community), the outside agency may need to raise the awareness of the local community and find possible solutions. Selection criteria should be formulated to enable agencies to respond to actual needs and reduce political influence. One effective means of community participation is for the community to request water supply facilities. But open invitations can result in a great number of requests coming from communities which cannot be handled by the government.

4.4 Organizational forms for community involvement

There is no blueprint for involving the community in planning and decision-making, but it is essential to build on the existing structure or organization in the community and to avoid creating new structures. Existing systems which are used include village councils (Egypt), extended family clan (Kenya), formal government, mothers clubs (Philippines), and public meetings. Reorientation or training may be required, because these organizations do not necessarily have experience in water and sanitation. Sufficient time should be allowed for the community to become acquainted with the approach.

Special emphasis is required to ensure that women's participation is more than just a token gesture. Existing village organizations may have to be expanded to allow for women's representation. In some societies, women are excluded from public decision-making, and therefore, although not favourable, separate consultation of the women may be required.

Imposition of leaders on the community by outside organizations is undesirable because such leaders may not gain acceptance.

4.5 Training

Early identification of the number and type of staff required is necessary to allow for planning of training. Baseline data collection, mobilization, technical skills, maintenance, administration and evaluation all require specialized training.

Female staff is required explicitly to work with communities and to enhance the involvement of women. They are more likely to remain in the region or villages, and thus, contribute to continuity. Extra facilities may be required, including child care, to stimulate women's involvement.

Incentives in kind, cash, or a raise in status are appropriate means to motivate staff. In particular, volunteers cannot be expected to work for a long period of time without compensation.

Often outside agencies cannot guarantee long-term incentives, and therefore, possible incentives should be discussed in the community at an early stage. To make community involvement work, team members may have to be re-oriented and trained in communication skills. This training should include discussions on local attitudes and taboos, and the role of women. Training methods can include role playing and discussions. Audio-visual materials, such as posters and slides, must be field-tested at the village level before use.

A case of a training programme was presented to the group.

Village-based workers are trained to carry out duties, including preventive maintenance of the hand pump, pump site cleaning, correct usage of the pump, environmental sanitation, personal hygiene, and correct usage of water.

Two men and two women are selected from each village. Trainees should be residents of the village, married, and have children so that they are unlikely to move out of the village after being trained. They are selected and supported by the community either in cash or in kind. The training period is six weeks and consists of two phases. After an initial two-week training period, the trainees return to their villages to work for about one month. Subsequently, they return to the training camp for a further two weeks. In this way, the trainers get feedback from the trainees.

A nurse from the local Ministry of Health is responsible for supervising and supporting the village based workers after their training.

5. REPORT ON WORKING GROUP II: LOCAL ORGANIZATION AND MAINTENANCE INCLUDING SELECTION OF TECHNOLOGY

5.1 Maintenance and Technology in Rural Areas

During the discussions, the group focussed attention on rural and semi-urban areas where the need for community participation is most relevant. It was recognized that in these areas the central agency is unable to provide day-to-day management of water and sanitation programmes. It is imperative that local communities are fully involved to sustain water and sanitation systems. Therefore, the recommendations of the group should be viewed in that context.

5.2 Design of Water Supply and Sanitation Facilities

Before approaching local communities, it is assumed that consultation at all levels, national, state, provincial and village, has taken place. It is also assumed that prior to consultation with communities on the design and technological aspects of water supply and sanitation facilities, appropriate steps in project preparation have been taken, such as, identification of community perceived need of water supply and sanitation facilities; consultation with other agencies responsible, for example, to obtain geological and socio-demographic data; local government organizations at all levels; and investigation of the various technical options by the agency.

At all levels, community involvement in the feasibility study is essential. They should be consulted on:

- their knowledge of the water and sanitation aspects of the environment, for example, floodings, and droughts;
- social, cultural and religious preferences or constraints;
- needs for and envisaged uses of the water to be supplied, for example, bathing, watering animals;
- the estimated costs of the options being considered;
- the capacity of the community to contribute to capital and recurrent costs, including proportional financial contributions to recurrent costs by commercial users.

After consultation, the most appropriate technical options and designs of water supply and sanitation facilities are developed and presented to the community. In the planning stage, the financial, operational and maintenance implications of these technologies should be included for joint consideration by the community and agency before the final decision is made.

These steps may require policy decisions or revisions at agency levels, for example, inclusion in the final report of evidence that the community has been consulted and the results used to decide on the design and the most appropriate technology.

5.3 Organization of local communities

Community consultation should involve both women and men through existing community organizational structures, for example, traditional systems of authority, religious organizations, voluntary unions, and women's organizations. When meetings are held, it is important that:

- information about meetings reaches women and minority groups;
 - time and venue are favourable for women to attend;
 - active participation of women in discussions is encouraged.
- Where necessary, special meetings should be held with women, through their organizations, and with minority groups.

In segregated communities in which women cannot appear in public, local 'contacts', for example, teachers, nurses, village birth attendants should be used to obtain indirect representation of the women in decisions on a water supply and sanitation project. This also applies to minority groups.

Women should be consulted especially on the siting of the water points and latrines, hours of service, and design and organization of upkeep of washing and bathing facilities.

5.4 Maintenance of facilities

Consideration of operation, preventive maintenance, and repair should be a prerequisite in the selection of technology, and, where possible, these should be decentralized. The degree of decentralization will depend on:

- availability of local technical skills (where high technological skills are requested and not available locally, decentralization cannot take place);
- community interest in training to obtain the technical skills necessary for maintenance;
- ease of obtaining and storing spare parts locally or of fabrication of spare parts with local materials;
- frequency with which maintenance operations have to be carried out.

Whatever the degree of decentralization, the maintenance programme should be planned from the inception of the project. This should commence with initial consultations with the community (on selection of technology and design) when maintenance workers and local level supervisory committees should be selected and the importance of preventive maintenance emphasized.

In selection of maintenance workers, long-term functioning should be considered by the community. Women as primary users of water facilities should be considered for training in preventive maintenance work, especially those living in the vicinity of the facilities. The caretakers should receive some financial remuneration from the supervisory committee to whom they are accountable. Women are likely to be interested in this type of part-time income generating activity. The preventive maintenance worker should not necessarily be trained for repairs or breakdown of the facility beyond a defined level.

The persons involved in maintenance, that is, workers and supervisory committee should be involved in the installation of the facilities. Continuity of maintenance should be ensured by training more than one caretaker.

Maintenance of sanitary facilities should be the responsibility of the individuals, women, men and children, according to local division of labour. Where communal facilities exist, maintenance should follow the procedure for water supply facilities as above, but perhaps with a larger financial remuneration because of the nature of the job.

The supervisory committee should also monitor and motivate proper sanitation maintenance.

5.5 Support to the community

Awareness campaigns and education programmes for the whole community on the facilities should be carried out by the agency from the inception of the project. Local artisans and entrepreneurs (both women and men) should be encouraged through training to produce standardized units, for example slabs, platform moulds, hand pumps, water containers, and prefab cubicles for new construction, and also to repair facilities. Logistic support to communities, such as ensuring provision of spare parts to the supervisory committee, is necessary. The community should be provided with information support, including teaching aids and materials. Technical information should be geared to the level of understanding of the community, and should contain pictures and simple text. Simple manuals, posters, etc., for use in villages need to be produced.

Pilot schemes on sanitation should provide certain items free or at subsidized rates to encourage the community and surrounding communities to adopt adequate sanitation.

5.6 Monitoring and evaluation

Evaluation should be an integral part of water and sanitation programmes. Simple procedures should be used. The evaluation should not be fault-finding but should concentrate on proper function and use of the facilities and the formulation of corrective measures. The agency should carry out the evaluation with major inputs from the community, especially women who are users and decision-makers on water and waste within the family. The results of the evaluation should be fed back to the community through the committee.

The system should be monitored at frequent intervals directly after installation. The supervisory committee should keep records of breakdowns and repairs. Ideally, the project should be evaluated within a year of commissioning.

5.7 Full coverage of unserved communities

In view of the limited finance available, special attention should be given to refurbishing existing supplies and to reducing of water losses because they require far less investment than new constructions.

At national level, the water supply and sanitation needs of three groups, urban poor, rural concentrated population and rural scattered population should be considered equally, and appropriate solutions and agencies identified and areas of coordination and cooperation defined.

6 REPORT ON WORKING GROUP III: HYGIENE EDUCATION

6.1 Definition of hygiene education and its status

The group observed that even though it compromised people with many years of experience in health education at all levels, there was no basic agreement on the meaning of terms, such as, "hygiene education" or "sanitation education". To some extent, this reflects the relatively low status of activities implied by these terms as compared with water systems development. For the purpose of discussion, it was agreed that hygiene education should refer to "an educational process aimed to change attitudes and behaviour to break the chain of transmission of diseases associated with inadequate levels of sanitation". This definition permits inclusion of activities, such as, reduction in fly breeding and of other vectors, and environmental sanitation in general.

Some activities do not have as their objectives protection of health, and therefore do not include hygiene education. However, in most cases, health is a direct or implied goal and a major justification for investments in improved water. The record is uneven in these programmes. In India and Pakistan, government-supported water developments are often within a ministry responsible for engineering projects but without any educational responsibilities.

In Sri Lanka, government-supported hygiene education now only reaches a very small proportion of rural people, but there have been recent increases in activity. Latin America was reported to have a long tradition of rural hygiene education associated with water and sanitation activities. Little hygiene education is included in government programmes in Kenya, and very little in Egypt and in Bangladesh. Thailand is carrying out a vigorous sanitation and water programme in rural areas, including hygiene education, but as yet, this is not a strong element. In Pakistan, a very encouraging new start has been made in sanitation and hygiene education with support from the Local Government and Rural Development Department and UNICEF. There are several reasons to explain this level of activity. When funds are scarce, a lower priority is given to both sanitation and hygiene education. In the past, there has been little demand for such services from the field. When communities seem ready to acquire and use new sanitation facilities or practices, often middle level officials are indifferent, preferring to stick to earlier routines. In India, for example, floods and threatened outbreaks of severe gastroenteritis have motivated higher level officials to initiate sanitation and hygiene education activities. However these efforts have often been blocked by middle level bureaucrats who were not motivated or trained, even when funds were available.

6.2 Approaches to hygiene education

A wide variety of approaches can be observed. In many instances, hygiene education is viewed as simply giving information through posters, radio, or lectures without any real understanding of attitudes or behaviour. The high level of success in Thailand in changing drinking water and sanitation practices has been motivated by factors, such as, convenience and taste preferences for rain-water rather than basic changes in attitude. However, without such changes, key hygiene practices, such as, the casual handling of children's faeces are difficult to alter. Nevertheless, there is increasing

evidence of a reduction in infant diarrhoea and other diseases associated with improved sanitation, in Thailand.

In Pakistan, a combination approach is showing promising results. There, hygiene education draws on easy-to-understand concepts, appropriate training of both men and women community workers, and the use of demonstration communities, called "moons", which motivate surrounding "star" villages to improve their environmental sanitation. A similar hygiene education package is being used with considerable success in Jamkhed, Maharashtra State, India.

Understanding and then changing attitudes is the key to improved sanitation. However, changes in attitudes sometimes follow new behaviour rather than initiate new behaviour. People who desire modern and convenient water-seal latrines may change attitudes and come to value hygienic practices more readily once they are in the habit of using such facilities.

People can be motivated in many ways. In India, there is evidence to suggest that concern about inadequate food leads people to accept improved sanitation when they accept that this can reduce intestinal parasites which rob families of food. In spite of some hesitation at middle level administration in Orissa State, the ready acceptance of sanitation changes by villagers has now induced the Government of India to plan a major effort in hygiene education and environmental sanitation. Special emphasis can be expected to be placed on the roles of village women, teachers, and children.

Frequently, successful hygiene education means the involvement of women volunteers and motivators. Programme planners must be sensitive and imaginative to incorporate women in environmental sanitation programmes. Where the culture restricts the movement of women, training can be held in religious centres. When women are not permitted to travel alone, they can be organized to travel in groups.

In some instances, sanitation technology constrains acceptance of hygiene education. People may be motivated to act but lack sufficient money for expensive double-vault latrines, or may not have a source of safe water. Low-cost sanitation technologies used successfully in one country remain unknown or unavailable in neighbouring countries.

Demonstration areas can succeed in stimulating a desire for similar improvements in nearby villages. However, without the necessary resources, this can result in frustration and disappointment.

Hygiene education, when well planned and executed, can succeed in changing certain behaviour in a short period of time. Other types of behaviour may be very resistant to change, and resources must be allocated to, for example, hygiene education in schools and facilities for longer term benefits. Children themselves can be important sources of change.

6.3 Development of an educational plan-of-action

The group concluded that a hygiene education plan-of-action for a community should focus on the specific pattern of disease(s) common in the area. It should incorporate as many local resources and people as possible and be developed in consultation with the community.

In developing such a plan, the designers should remember that they are involved in an interactive process in which an unsuccessful effort should be seen as a feedback or corrective mechanism. The designers should also remember that a community is more than just the leaders. Therefore, the audience for the action must be the community at large.

In developing a plan, the object should be to change habits. Therefore, as many approaches as possible should be involved without any one being used to the exclusion of another. For example, visual aids should be used as a support to the process and not as the only technique.

For a plan to be successful, a good deal of time and effort should be spent in teaching the educators (health guides, volunteers, etc.) how to present the materials in the most effective way. In doing this, it should be realized that people often use the same methods to teach as they used to learn, for example, people often lecture because this is how they were taught. Therefore, the students need to be exposed to a wide range of techniques and approaches so that they can vary their approaches to suit the community's need. Obviously, no one plan will fit all situations and/or cultures.

6.4 Selecting educational content

The group felt that a hygiene plan of action should focus on diseases common in the area. The plan should seek to promote actions by individuals that will prevent or reduce disease resulting from unsanitary conditions, rather than to provide medical details and/or explanations of disease transmission routes. The plan should focus on promoting activities, such as, hand and body washing, proper excreta disposal, and environmental sanitation, in response to community interests.

6.5 Knowing the community

Hygiene education workers must serve the people of their communities, and therefore, must make efforts to understand how the community receives and acts on information on an individual and collective basis.

Current government approaches tend to be authoritarian and to be done on an "in-out" basis rather than making extensive use of local resources.

In seeking local participation the relationship between the cost of the plan and the benefits expected must be recognized. In designing the plan, the hygiene educator must use diverse approaches including: local radio, letters to the editor of newspapers, tape recorders, and radio stories. These techniques should be used such a way that a dialogue is established, and that they do not merely become a means of presentation.

The most important reason for the designer to have a dialogue with the community is so that each understands what is expected from the other. Much damage can be done if an approach is promoted to which the community cannot respond.

6.6 Obtaining planning information

Research findings about knowledge, attitudes and practices are not always reliable. The group felt that information about community needs and resources must be drawn from the community by dialogue and observation. There was a division of opinion as to how this should be done. Some felt that programme needs are paramount and that the community should be consulted only shortly (weeks or days) before the drilling rig arrives and an intensive promotion and dialogue be carried out during their stay and afterwards. Others felt that extensive dialogue prior to programme action is necessary. Both groups cited examples from India, Sri Lanka and Latin America. The group felt that there is an increasing number of media available to the hygiene educators (radio, tape, slides), and that traditional practices should be modified to bring about changes in local behaviour.

6.7 Relating hygiene education to other development

The group felt strongly that hygiene education should be coupled with water and sanitation programmes. Hygiene education should be a broad-based activity and not necessarily limited to water and sanitation because follow up is difficult when so limited.

Sanitation is rarely a high priority but successful health education can make it a building block for other efforts.

More evidence is needed to show policy makers that their plans will be cost-effective with community participation, and that national recognition and support are justified.

6.8 Conflicts in programme priorities

No general agreement could be reached about either the relative importance of hygiene education, water and environmental sanitation, or how these aspects help to meet basic human needs as compared with other health or development goals. As a result, a wide variety of opinions exist about the importance of hygiene education not only between officials and villagers but also within a single agency or ministry. Therefore, hygiene education must be addressed not only to community and field-workers but to all who are in positions of influence over environmental sanitation activities in the field.

6.9 Staff for hygiene education

The group felt that at least three levels of workers are required to make health education effective:

- trainers at the local level;
- trainers of the trainers at regional level;
- designers at programme level.

It was felt that educators need to be highly motivated and to be sensitive to the needs of the people. Women, who have access to the homes make good promoters. The group cited a number of instances where women did not have major roles in programmes, in spite of their active involvement at the local level.

It was felt that a variety of workers is needed for effective hygiene education. Men and women should be trained to work together; women have the best access to the point of use for water and sanitation, that is the home.

6.10 Hygiene educators as community organizers

In some countries, health education and community organization are carried out by the same group of field-workers, because it is felt that special categories of workers cannot be afforded. In other countries such as, the Philippines, India, and Sri Lanka, there are specially trained groups of community organizers and health workers coming into the community. In Pakistan, community volunteers deal with water, sanitation, nutrition and education, but are supervised by specialists in these fields.

Workers in water supply and sanitation may not find easy entry into communities which have organized themselves to achieve other objectives, or which have become politicized on other issues.

It was felt that, on the whole, it is preferable not to limit the field in which individuals work, as long as they do not spread themselves too thin so that nothing is achieved.

Multiple-purpose community developers should be:

- trained in water supply, sanitation and health issues, in India, for example, UNICEF has trained people for community organization;
- aware of the need for coordination of development agencies, such as, Departments of Water and of Agriculture.

Single purpose health educators should:

- recognize that if no community structures exist they may have to create them, but in an urban squatter area, for example, this could be very difficult;
- work with community groups or organizations which have wider goals, for example, spontaneous groups of women, or a development worker from another agency.

It was also noted that the movement to the development of community organizers, which began in the 1950s and which has developed into a ministry level organization in some countries, is now on the wane. An important legacy of this movement may be that, before community workers are sent into the field, they should be aware of the importance of formal and informal social structures, leadership issues, and decision-making processes within a community .

6.11 Selection of educational conditions

There is no evidence to support the exclusion of any community group. Experience indicates that the family, woman, man, children, grandparents, should all be involved to make education effective.

Countries differ. In some countries, women may be more responsible than men but they may not have the tools to accomplish many tasks alone. Women and their influence on decision making have been neglected. Yet polarization leading to conflict between the sexes can damage a programme. However, each group men, women, and children may need to be reached in separate dialogues.

In some areas, home visits can be a helpful beginning to hygiene education. It may also be possible to involve schoolchildren in health education programmes at community level, as for example, in a UNICEF sponsored project for children in Burma, in which they mapped the village and located pregnant women, the sick, and the old in the community.

Groups of women in literacy groups (Kenya), saving groups (India, Pakistan), clubs or religious institutions can be reached effectively, can provide peer support, and may grow into larger projects for wider health education.

One way of empowering women, especially poor women, is to involve them in the collection and sharing of information.

6.12 Estimation of resources needed

Specific requirements can only be established by careful investigation of particular projects. However, these items should be given several budget categories from the commencement of a project, and should make up a substantial proportion of the budget, appropriate to achieve the objectives of the programme.

The group suggested that all participants in the symposium endeavour to ascertain in the projects with which they are connected the amounts spent on such activities, the proportion of the total budget, and the man hours devoted to these activities.

This will assist in making more precise estimates of the amounts required in future programmes.

6.13 Summary of recommendations and conclusions

6.13.1 Imbalance of financial and human resources

The group was not satisfied with the imbalance that exists between financial and human resources available for hygiene education and expected results, that is, increased environmental sanitation levels and reduced disease transmission at the community level.

Information is needed to determine the extent to which Decade resources are being allocated to water, sanitation and community organization and hygiene education.

New policies are needed for re-allocation of a greater proportion of resources for sanitation and hygiene education.

Steps should be taken to increase exchange of information on experiences in hygiene education in LDCs, including organizational techniques, mass communication and other ways of motivating women, children, and men.

6.13.2 Split of hygiene education functions

The group was concerned about the division of hygiene education functions between the various ministries and/or institutions responsible for the construction of water supply and sanitation systems. This is a very unsatisfactory situation.

Countries should develop programme descriptions that define realistically the location, function and resources to be assigned to hygiene education in their water supply and sanitation programme. IRC should assist this effort by collecting and distributing case studies that show how various countries plan, organize, finance and evaluate their hygiene education efforts.

6.13.3 Training

The group was concerned that traditional authoritarian training techniques for all levels of hygiene workers is used to train all levels of hygiene workers.

IRC should explore and distribute examples of human resources development techniques which are user-centred and result-oriented. These case studies should include examples of educating programme officials as well as villagers.

6.13.4 Two-way dialogue

It was felt that hygiene education should be a two-way dialogue between the community and change agents. The time frame of this dialogue must be adapted to a community's priorities and resources and should be seen as a continuous activity.

Countries should examine the impact of various educational approaches, such as two-way dialogue, in terms of their impact on hygiene practices. Agencies, such as IRC, should assist in examining, testing, publicizing, institutionalizing, improving results, reducing costs, and training human resources required.

7. REPORT OF WORKING GROUP IV: LOCAL MANAGEMENT INCLUDING FINANCE AND INCOME GENERATION

7.1 Advantages and disadvantages of increased community responsibility for financial management

A positive attitude by national and local authorities to decentralization of responsibilities is a basic prerequisite. It includes the possibility of private activities. The main advantages of increased community responsibility for financial management include:

- creation or strengthening of feeling of ownership which will lead to better care and management of facilities;
- shorter lines of communication, optimal use and easier mobilization of local resources in terms of manpower, means, knowledge, materials, etc. (The community will be able to act more independently, for example, address itself directly to the private sector for repairs and spare parts, instead of reporting to a faraway agency);
- the community is directly involved in budgeting for future operation and maintenance costs and determining whether they have financial capacity (affordability) to met these costs;
- by reducing allocation for operation and maintenance from government budget, a larger proportion of the total available budget can be used for investment projects thus increasing coverage (reaching more communities);
- more direct control over own facilities may also strengthen feeling of identity and self-confidence (human development process).

Possible disadvantages may be:

- that better-off sections of the community benefit more than poorer sections (safeguards need to be built in);
- that the financial burden to the villagers is increased when less appropriate technology is introduced by external agencies (higher recurrent costs).

7.1 Fostering community responsibility

The establishment of a village water committee which represents the various socio-cultural sections of the community is a basic prerequisite. This committee should be responsible for activities, such as, appointing a caretaker, collecting funds, and improving hygiene behaviour.

Women should also be involved in decision-making in the selection of the system to be installed. This decision heavily influences the level of operation and maintenance costs. However, the issue should not be left to women alone, because water is also a basic need for men who must also share the responsibility.

Not only the costs of improved water supply systems, but also the economic benefits derived from an improved water supply should be considered. This issue must be taken into account in planning and decision making. Experience shows that it often remains veiled and therefore, it is necessary to investigate the water use customs, especially the use of water for other than domestic purposes (cattle, irrigation).

7.2 Income-generating activities

Income-generating activities are part of an integrated approach. There are many priorities of which water and sanitation are but two. Most communities want higher incomes for their families. Water agencies are not appropriate for promoting other activities to generate income. Different institutions have different responsibilities, and are involved in other sectors. Income generation is important and can be done by other activities not related to water supply.

In planning improvements to the water system, the various uses of water, such as for individual garden plots or productive uses, must be known. Planning should take into consideration whether villagers can afford to pay and also their willingness to pay. Planning should also ensure that poorer villagers have access to the facilities.

It is inadvisable to base a system on improved local income generation in the future. The system must be within the present economic capacity of the community. As the economic situation in the community improves, the system can be expanded and updated. It is difficult to prove that the time saved by women has been used for other productive activities.

7.3 Revenue systems

In planning the revenue system, consideration should be given to ensuring that the poorest groups in the community have access to the water facilities, and to whether the community is accustomed to paying for water.

In areas where water is scarce and is used for cattle, it may be appropriate that households pay for it according to the number of cattle owned and that it is provided free of charge for human consumption, as for example, in the dry zone of Burma. Similar arrangements may also be applied to amounts of water used for small-scale irrigation.

In some countries, the government has a policy that water is free. This makes it difficult to devise methods to collect revenue for operation and maintenance. In Tanzania, one method to be employed is indirect charges. A development levy is to be collected by village councils, part of the levy is to be delivered to the district government, and part is to be retained for use in the village, of which a proportion is to be allocated to the water system. In Morogoro, in larger village systems, an additional direct charge is to be made for users with house connections. In this way it is hoped to phase out present government subsidies.

7.4 Financing of sanitation

Sanitation is a difficult and complex issue; there are few examples of successful programmes. Such programmes require working with the community from the beginning, health education, and a knowledge of the local culture and traditions.

Motivation is most important in the development of sanitation programmes, and may be the force of circumstances: densely populated areas and a desire for privacy by inhabitants, a desire for convenience, or some other reason.

The proper use and maintenance of these facilities requires an education programme for the users. Rural dwellers are not accustomed to the use and care of such installations. Community latrines can create serious problems if not properly operated and maintained. Good operation has been achieved in those operated by private enterprise or by a cooperative with a paid membership.

One successful project involved the promotion of a local contractor in the village to make latrine slabs. This was coupled with an education programme and a village-level organization. An important development was the taking up of suggestions by the villagers to improve the unit and the project.

7.5 External support for community management

Community participation may involve heavy outside support in the initial stages of the programmes. As community organization develops, outside assistance can be gradually decreased.

The justification for developing and investing in community participation is to make the project more cost-effective. The object is to make the community more self-reliant and ensure adequate maintenance and use of facilities, and thus to release funds to serve other villages.

Community participation also requires the training of outside agency staff. It is really a two-way process; agency participation in a community project.

Various types of continuous support are required. The type of support is related to the type of system, and includes training, advice, and technical and financial assistance. Less training of caretakers for operation and maintenance is required for simple gravity fed systems than for pumped water systems. The financial management of point source systems can be less complicated than those requiring the purchase of fuel and billing of users in a mixed system with standposts and house connections. The outside support can be used to assist with expansion of the system, with unexpected major repairs, and to ensure that spare parts are available.

Assistance is needed to set up simple bookkeeping procedures, collection systems, and also to provide for tools and spare parts. It must be emphasized that continuous outside support is needed, but may be decreased in time.

The private sector can also provide support by providing skilled tradesmen, such as, plumbers and mechanics for repairs, maintenance and spare parts. There are examples of villages and cooperatives raising enough funds to hire local contractors to build their water supply system, which they have then operated themselves. Some cooperatives have obtained loans from local banks and provided funds at a higher rate of interest to other enterprises, thus raising funds for their own projects.

Government policy should permit the development of organizations, such as cooperatives, at a village level. There should be high level support for women's participation.

7.6 Alternative financing methods to promote community-based financial management

"Alternatives" here refers to alternative funds from central water agencies, government budgets and donor contributions. Some options were suggested by the working group:

- Revolving funds. There are known examples in South American countries of villages that have managed to establish a revolving fund with the aid of a soft loan, replenished by consumer contributions.
- Commercial loans. These may be considered as an option for well-run water supply systems, to be obtained in combination with government subsidies, for example 40% commercial loan and 60% government subsidy. A loan guaranteed by World Bank or another institution with soft loan facilities could be made to the water committee by a local bank. Some members of the group doubted whether commercial loans could be serviced by poorer consumers. A community loan presupposes that like a commercially organized water supply, a domestic water supply is a commodity but on a non-profit basis. The questions remain whether credits increase the total organization and maintenance costs and whether banks and central monetary authorities will permit commercial financing of rural water supply systems which are community managed.
- Cooperative funds. Water supply schemes can also be financed by funds accumulated by production cooperatives which are prepared to make their savings available for investments to their members or the community to which they belong. This type of self-help must be completely voluntary, and not, for instance, like the Harambee system in Kenya. Although originally sound in principle, this system has now been abused by politicians. Harambee contributions are often forced upon the people (not collected by themselves) and are allocated at public meetings by politicians, and not by the villagers themselves.
- Communal production revenues. In many African countries, a well-known system is that of communal village fields which are cultivated with cash crops, and the revenue from which is used to pay for public services (buy medicine, a pump, a village warehouse, etc.).
- Linkages with other development interventions. To arrange finance to improve its water supply scheme, a community bring pressure on authorities to include their water problem in other programmes, for example, in irrigation schemes, or basic health programmes.

In addition, it was strongly stressed that available funds for investment in water supplies and rural development can often be used more efficiently, particularly by better coordination of planning and implementation of programmes.

7.7 Summary of recommendations

A community should be involved in all stages of the planning, implementation and management of its water supply and sanitation system. Financial arrangements for both recurrent costs for operation and maintenance, and as far as possible for repayment of capital investment, should be an integral part of this process.

Community-based financial management should be promoted, in particular to strengthen the organizational and financial independence of the community water and sanitation sector. A positive attitude of the national and local authorities to decentralization of responsibilities and to private activities is a basic prerequisite.

Appropriate revenue collection methods should be developed for both direct and indirect charging systems and should take into account factors such as, the type of water supply system, existing practices, government policies, traditional village organization, local income-generating pattern.

When a village or a group within the community demonstrates willingness to accept responsibility for its water supply and sanitation, national and local government agencies should support that initiative by providing information, hygiene education, technical advice, subsidies, training of local staff, and monitoring. This approach is based on "agency participation in community projects" rather than the other way around. The private sector can also provide support. It can provide skilled plumbers and mechanics for maintenance and repairs and a system for the delivery of spare parts.

Given the limited financial capacity of both governments and communities to accelerate the coverage, innovative alternative financing mechanisms and methods should be explored, including loans from development banks, informal local credit systems, cooperative funds and revolving funds.

The level of technology should always be socially and financially affordable as judged by the community.

In view of their special concern in the sector, particular attention should be given to the involvement of women in whatever financing scheme may be devised. This should include full consultation in planning stages and also their effective involvement in water or finance committees. In some cases, women's groups may assume responsibility for financial management and revenue collection, and therefore appropriate training in bookkeeping, accounting, etc. should be made available to them. They should also be given opportunities for new income generating activities which may be undertaken with the time saved from water collection duties, and thus a portion of their new earnings may be contributed to the water fund. Care should be taken to ensure that this does not become simply the transfer to women of another burden which should be shared by the whole community.

There is a need for simple and adequate information about community based financial management and existing practices in financing both recurrent costs and capital investment. A literature review, presenting existing knowledge and experience, and also a simple guideline on how to deal with the financial management of community water supply and sanitation systems should be prepared to support further development work.

APPENDICES



APPENDIX I

Water and Women

Opening Address by Mrs E.M. Schoo
Netherlands Minister for Development Cooperation

The combination of water and women as a subject for a scientific symposium might sound a bit odd to people in western industrialized countries. People in Holland would probably not quite know what to think of it, nor where the problem lies. Clean water is abundantly available here for everybody and the discussion about women's rights is related to their role in society at large and not to water only. But in developing countries the situation is totally different. Clean water supply is very much more problematic there, and the relationship with the role of women is also more specific. Women play, in fact, a crucial role in water supply for all people in developing countries.

We are all familiar with the picture of women in developing countries carrying a water jug on their head and a baby on their back. This illustrates clearly how vital the role of women in this respect is and also how much time and labour is involved with the supply of one of the very first basic needs; water by women in developing countries. That means, that we should give priority to the role of women in water supply programmes and that we should involve women in all phases of project development and implementation. By stimulating women to participate in water supply activities we can create the very condition for a more diversified involvement of women in other activities and projects in developing countries.

In the new directions of the recently published bilateral aid policies of the Netherlands Government much attention is given to the integrated rural development. Together with food, the availability of water is one of the most basic conditions for development. Water supply schemes are at the very heart of the integrated rural development programme.

There is no consensus about the importance of water for better health conditions in developing countries. Studies show different results. Some indicate that the supply of clean water leads to a considerable reduction in child and infant mortality rates in rural areas. Others come to the conclusion that there is hardly any relationship between decreasing occurrence of water related diseases and water supply schemes.

Everybody agrees, however, that clean water is in any case a first step towards more healthy living conditions for people in developing countries and that the role of women in this respect is vital indeed. From the moment the water is put into the bucket, pumped or drawn from the well, women are in charge. They wash, cook, take care of their babies and clean their homes. The way they care means survival for all men, women and children. The quality of the water, at the moment it is drunk, determines life or death for millions of people. The prevention of all dangerous diseases depends on how women handle water, food, lavatories, garbage and the education of children. They in fact have to do almost everything by themselves. Hygiene is the keyword. But I wonder whether hygiene can be improved without

additional infrastructural provisions, from buckets to sewerage systems. Health education is of course also necessary, especially in the field of child care.

Under these conditions I am sure clean water will contribute to healthy children. Healthy children again are an important aspect in family planning and birth control. Availability of contraceptives is of course a precondition for the freedom of choice of men and women.

So far, I only spoke about the importance for the family; that automatically also means that I was talking about women in their traditional role of house wife and mother. That, of course, does not reflect how I see the need for changes in that role using water supply programmes as agents of change. It is true that water has a potential for improving the position of women. By recognizing the important role women play in water supply and by promoting their participation in water supply programmes, their self esteem and social status will increase this way. Carefully integrated water supply programmes can be a vehicle for more involvement of women in development.

That is why I stress the importance of involving women in water supply schemes and granting them the main role. This is possible by assisting them in their organization, to listen to them and to look together for the best technical, economical and social solutions and to involve them in the maintenance of activities and programmes.

That is the way to acknowledge the important role women play in development. And projects that only provide services to the people without involving men and women have failed too often.

I hope you understand, from the few remarks I have just made, how important I consider this International Symposium to support the International Water Supply and Sanitation Decade. This symposium also marks the 15th anniversary of the establishment of the International Reference Centre for Community Water Supply and Sanitation (IRC).

It is with pleasure that I open this symposium. I am looking forward to its results.

APPENDIX II

Keynote address by Dr L.A. Kaprio

Regional Director, WHO European Region
on behalf of Dr H. Mahler,
Director General of WHO

Mr Chairman, Mme Minister, Ladies and Gentlemen.

It is a great pleasure to join in the commemoration of IRC's 15th anniversary, which is being marked in so appropriate a way, by the selection of a symposium subject so vital to all of us concerned with the global and national efforts now being made around the world in the field of water supply and sanitation.

I am speaking here on behalf of Dr Mahler and the whole World Health Organization. I myself served in WHO for almost thirty years. I have quite a few memories of the early days. When I first met people from Holland in the developing activities all over the world I saw they had two major concerns. One was in the water field both in the high technology and also on the water supply side. The other was nutrition.

In these two fields I realized that they were applying the lessons from their own very difficult experiences during the wartime when their water supplies were destroyed, and when their nutrition situation was one of the worst on the European continent.

Since that I have of course observed in many other fields the tremendous contribution from the Dutch people.

On behalf of Dr. Mahler and myself, and on behalf of WHO's technical staff, I would like to express our appreciation to IRC, and to the Dutch Government, which has provided such valuable support to the Centre over the last fifteen years. Some of you will no doubt recall the origins of the collaboration between WHO and IRC back in 1969.

At that time, WHO invited institutions, through their national governments, to help in the prime task of developing and promoting programmes which will lead to attainment of a satisfactory level of health for all people. Institutions which agreed were designated WHO Collaborating Centres.

One such agreement was made between the late Dr Candau, then Director-General of WHO, and the National Institute for Drinking Water in The Hague. The designated name then was the International Reference Centre for Community Water Supply. More recently, IRC has added the words "and Sanitation", and has changed its constitution to that of an independent Foundation. We wish the new IRC/CWSS well in its independent role, and believe it to be a valuable technical resource.

With three and a half years of the Water Decade now behind us, it is instructive to look back at the influence that WHO and IRC, together and separately, may have had on developments in the water supply and sanitation sector. In doing so, we must also see how our efforts in the future may be directed towards meeting the needs that are now becoming apparent through Water Decade planning and evaluation activities.

WHO will shortly publish a review of the baseline situation at the start of the Decade, and the hopes and aspirations of the developing countries for significant improvements by 1990. Looking back, we may feel perhaps that too much emphasis was given in 1980 to the idealized message of the Decade, promising "Safe Water and Proper Sanitation for Everyone by 1990".

It is clear now that the developing countries themselves, having recognized the constraints to accelerated development and the enormous financial commitments implied by full-coverage programmes, have opted for realistic targets, not impossible dreams.

That is not to say that the Decade plans are not still ambitious, and we should all be encouraged to find that they are. WHO's analysis of country reports covering 75% of the population of the developing world (except for China), shows that the countries plan to bring new water supplies to more than a billion people in the course of the Water Decade; and 600 million extra people are due to receive proper means of sanitation by 1990.

This is clearly an awesome task. It challenges all of us to produce the required support. For WHO and IRC that means a continuation, and perhaps even a strengthening of our efforts to promote successful technologies, ideas, techniques and institutional developments. We must also structure our approach to provide the information and the advice and services that are now being demanded through these country reports.

There is much to be proud of in our efforts leading up to and during the Decade. IRC's pioneering work on hand pump development provided the spark for what is potentially one of the major technological contributions to rural water supply programmes. I know that IRC continues to support the programme of UNDP and the World Bank in this vital research, and that the Centre's own catalogue is seen as an important contribution in this field. Indeed, I believe it is right to say that IRC's guideline on operation and maintenance of hand pump installations provides a model for O & M manuals throughout the sector.

Earlier publications on slow sand filtration, and on public standpost water supplies have established the Centre's reputation for highly relevant programmes and pertinent publications. This work on hardware is, I know, being partnered by important contributions in the software field, and here I would mention specifically the collaborative efforts of WHO and IRC on human resources development, on minimum evaluation procedures, and again on operation and maintenance.

The role of IRC has been important in spreading the word through its publications, through the Newsletter, symposia, and, perhaps as important as any of the other mechanisms, through its responses to requests for information, and through the personal contacts of its staff on their visits to developing countries.

One of the communication channels in which we all placed great hope was of course POETRI. The POETRI programme has shown to us that countries can be encouraged to share information. If it has also shown that ambitious programmes which call for considerable institutional support and even institution building cannot expect early dramatic progress, then perhaps we should accept that as another lesson of the Decade.

One very important factor to emerge from WHO's baseline review is the considerable reduction in the anticipated costs of Water Decade programmes. Forecasts made in 1980 of Decade costs ranging from \$ 300 to \$ 600 billion raised expectations way beyond realizable goals. With hindsight, we may think that a note of caution should have been introduced then. It wasn't and we have lived with the consequences for three years.

Our figures now show very substantial reductions in these estimates. The more realistic targets that I have already referred to of course contribute considerably to these reductions, but, more significant, I believe, is the obvious trend towards low-cost technologies, which means that many more people are now being served from the same size investments.

Appropriate technology is a message that WHO and IRC have been promoting for many years. It is highly encouraging to witness the wide spread of that message, and the obvious beneficial effects it is having.

So much for the past, and I believe there is much in which we can take pride together, in the way that our joint messages have been delivered and accepted. But what of the future?

If there is one thing which stands out above all others in the country reports WHO has received, it is the desperate shortage of skilled manpower. We have all seen the results; broken-down systems, massive leakage, disgruntled consumers returning to polluted sources, etc., etc., etc.

The countries are crying out for help. They all plan to train more people. We must ensure that all the resources at our disposal are made available as widely as possible. We must also ensure, as our HRD Strategy Document makes clear, that motivation, job satisfaction, and career development go hand in hand with training. We have started the task; others too may wish to play their part, but let us work together to see that the efforts already extended are not diminished by a lowering of momentum just when the needs are greatest and the demands are being made.

Directly linked to the question of training, through the massive demand for proper maintenance and rehabilitation of existing systems, is the need to develop and promote appropriate tariff systems. More than half of our reporting countries recover less revenue through tariffs than they spend on water production. Again the results are obvious, though the solutions may not always be so obvious. We at WHO, both in headquarters and in the regions, need good examples of proper tariff systems, so that we can give advice to countries requesting it, and promote change throughout the various regions. One of the important side issues to emerge from IRC's valuable work on public standpost supplies, was research into revenue collection. May we hope that cooperative efforts may soon be turned into useable guidelines on this very important subject.

I turn now to another activity in which we may jointly claim to have had significant impact; community participation and through it acceptance of appropriate technology. There can be no doubt that a vital contributing factor in the marked reduction in unit costs reported to us by developing countries has been the great increase in public participation, particularly in rural water supply and sanitation schemes. IRC's timely bibliography on Participation and Education in Community Water Supply and Sanitation Programmes has played an important part, and both our organizations will, I know, make sure that the evident momentum created by the many campaigns is not lost.

What better example could there be, indeed, of our commitment to the subject, than this seminar. In water supply and sanitation, more than any other single development sector, the role of women is of paramount importance. That message was a long time getting through, but now we can all quote examples of successful projects where the key element has been the participation and frequently the leading role played by women. That role can only be enhanced by meetings such as this, and subsequent distribution of the results of the discussions.

I will end this brief, and necessarily incomplete, review of our past and future collaboration, with an example which is particularly pertinent to my own region. Issue of the new WHO guidelines on drinking water quality will, we all hope, be a significant contribution to safe water supply development in the Third World. IRC's own drinking water quality programme serves the same ends. Let us work together to ensure that both standards and technologies selected by Third World countries in their Water Decade programmes are both safe and appropriate.

Mr Chairman, I hope that these remarks have made it clear that we at WHO value our collaboration with IRC, and see great scope for further development of that collaboration under IRC's new structure in the future.

Fifteen years ago, WHO and the Government of the Netherlands gave birth to a water baby. On its fifteenth birthday, we congratulate our offspring on its productive youth, early maturity, and worthy independence; we wish it well through its adult years and pledge both guidance and cooperation in appropriate measure. Happy Birthday.

Appendix III

Message from Mr G. Arthur Brown
Chairman, Steering Committee for
Cooperative Action of the International
Drinking Water Supply and Sanitation Decade

Read by Dr P. Lowes, UNDP/WHO
Coordinator, Water and Sanitation Decade

Please accept my apologies for not being with you today to join in the 15th anniversary celebrations of the IRC. As the Chairman I had hoped to personally bring to you the good wishes of my colleagues and fellow members of the Steering Committee for Cooperative Action. Unfortunately the affairs of the UNDP Governing Council have detained me in Geneva, but I know that all the 11 member agencies represented on the Steering Committee would want to join me in wishing the IRC a long and effective life.

We have been encouraged in our work on the Steering Committee to know of the special interest the Government of the Netherlands is taking in the Decade by its strong support for the IRC whose activities are all focussed on furthering Decade goals. IRC assists in fields as widespread as handpump testing, slow sand filtration and public water supply standposts, as well as by its newsletters and symposia, but particularly in the still under explored area of exchanging technical information.

All of us on the Steering Committee applaud IRC's efforts and the generous Netherlands Government support which makes them possible. We wish you all success for the next 15 years.



Appendix IV

The delicate balance between community contribution and agency support

Presentation by Mr L.A. Lawson
National Water Commission, Jamaica

Mr. Chairman, distinguished guests, fellow participants, ladies and gentlemen. I deem it an honour and a great pleasure to be asked to participate in this symposium which has been organized to mark the 15th anniversary of the establishment of the International Reference Centre for Community Water Supply and Sanitation, familiarly known by the acronym IRC.

I wish to offer congratulations to IRC on my own behalf as well as their many friends in Jamaica on achieving this milestone in the history of their organization and to thank the Netherlands Minister for Development Cooperation and IRC for their kind invitation to attend this symposium.

I would like also to take this opportunity to express our deep gratitude for the invaluable technical assistance which we in Jamaica have continued to receive in general from the Netherlands over the past several years and to recognize in particular the role of the International Reference Centre.

Assistance received by my own agency, the National Water Commission of Jamaica, has varied from postgraduate training and sanitary engineering for engineers at your excellent institution, the Delft University of Technology, assignment of skilled personnel from Holland to work in Jamaica on projects of the National Water Commission and our participation in international programmes such as the Slow Sand Filtration Project sponsored by IRC.

I have been asked to contribute to this symposium by addressing you this afternoon on "The Balance between Community Contribution and Agency Support" a subject which is both important and interesting and one which currently is of concern to my own organization the National Water Commission of Jamaica. It is also relevant to the question whether or not we shall be able to achieve the objectives of the International Drinking Water Supply and Sanitation Decade, as without the amalgamation of the hopes, energy and support of the community with the skills of the supporting agencies true progress will not be achieved.

I make no claims to be an international expert on this subject as I do not personally have the benefit of wide international experience. However, I intend to draw on my own experience, especially in the field of water supply and sanitation over the past twenty-three years and that of the agency to which I belong, the National Water Commission, to share with you certain ideas on the subject and in turn to benefit from the views of other participants in subsequent sessions of this symposium.

I would like to say a few words about Jamaica and water supply and sanitation there.

Jamaica is a relatively small island in the Carribean with an area of 4243 square miles and a population of some 2.2 million of whom approximately 650,000 live in the capital Kingston. There are four other urban areas with populations in excess of 50,000 persons. Some 50% of the population is essentially rural and dependent on agriculture for their livelihood.

The island has a maximum length of 146 miles and the width varies between 22 and 50 miles. All communities are linked to the rather extensive road system in the island.

When I add that we have an annual average rainfall of 78 inches i.e. nearly 2000 mm, one may well feel that there should be no water supply problem.

However, the island is mountainous and while the greater percentage of rainfall occurs in the northern half of the country there are serious droughts on the south coast where there are 70% of the population and the flat coastal plains requiring irrigation water for much of the year. On this south coast most of the water used is from well sources.

There is a strong Central Government system with 60 elected members of Parliament, located in the capital Kingston. The island is divided into fourteen parishes with a total of some 260 selected representatives forming the Parish Councils or local government bodies.

The National Water Commission is a statutory body which is responsible for water supply and sewerage throughout Jamaica and has also a major role in the development of irrigation projects. It was established in 1963 and has grown rapidly absorbing some of the responsibility for water supply administration and operation previously carried out by the Parish Councils.

Currently the National Water Commission carries out the planning, design and construction of all major water supply systems while for minor systems, mostly based on small springs or streams or rainwater catchment tanks this responsibility rests with the Parish Councils, i.e. the local government authorities.

The National Water Commission also manages and operates all aspects of water supply for the three main urban areas, but for the other 40 major systems it operates only the sources of production and sells water in bulk to the Parish Councils which in turn distribute to consumers. The Parish Councils also manage and operate all minor systems.

Total production of water for domestic water supply systems is about 120 million gallons per day, 15% of which is for minor systems.

The table below summarizes the situation and includes information on the percentage population served by the different types of water systems:

Type of water supply	Responsible agency		Percentage population served	Percentage of total production
	production	distribution		
For 3 main urban areas	NWC	NWC	35	51
Other major systems	NWC	PC	22	34
Minor systems	PC	PC	36	15
No public system	-	-x	7	NA

x Water trucked to some to these areas in times of drought by PC.
 NWC - National Water Commission
 PC - Parish Councils
 NA - Not Available

Water from all major systems is chlorinated and regularly monitored for quality but a large number of the minor systems serving some 300,000 persons supply water which is untreated.

Sanitation in general is the responsibility of the health agencies but in the field of sewerage, the NWC is responsible for all phases of design, construction and operation and this is restricted to the large urban areas,

For the purposes of this address today I shall deal essentially with the subject of community participation against the background of water supply problems.

Up to 1963 the Central Government agency designed and constructed most water supply systems and passed these on completion to the Parish Councils for administration and operation. Since its formation in 1963 the responsibility for operation of the sources of production of major systems has passed to NWC while the Parish Councils now build minor systems.

There are four main factors which have been influencing these changes:

1. lack of technical skill at the local government level to manage and operate water supply systems, often resulting in the rapid deterioration of treatment plants and pumping equipment and excessive losses due to leakage and misuse on distribution systems;
2. the lack of financial viability in respect of Parish Council operations where in 1983 about 10% of their expenditure on water supply was recovered by water charges to consumers;
3. the need to improve water quality for all water supply systems;
4. the overriding concern to have the organization responsible for water supply really sensitive to the needs of those it serves.

There is now an active programme being developed to transfer much of the remaining responsibility for the distribution of water in respect of major systems from the local authorities to the National Water Commission and it might be interesting to reflect briefly on this development.

Initially there was resistance at the local level to the further transfer of responsibilities for water supply from the local authorities. This was seen to represent a significant loss of influence with the communities which they represented. However, with the increasing financial pressures on the Councils and problems of maintenance there is now a greater willingness to hand over the full responsibility for major systems to the National Water Commission.

By retaining control of the minor systems requiring less complicated technology, the Parish Councils will be left with what they, as opposed to the NWC, can better manage and which largely will be supplying a social service since many of these systems provide mainly standpipe services. The National Water Commission also gives technical assistance to the Parish Councils when requested.

The challenge to the National Water Commission is not merely to retain the present level of contact with the local community in the water supply field but to improve on the present situation and to develop a proper concept of water supply best suited to the consumers in the Jamaican context. We have to be sensitive not only to the vocal urban populations we serve but also to the consumers in rural areas and in the urban fringes of the large towns. I do not pretend that we have found a solution to this problem but as a start, while the design and construction activities remain centralized, operations are now largely in the hands of regional offices.

The island has been divided into four regions and each region into districts for operation and maintenance of water supplies with appropriate levels of supervisors for each area. The operations by the National Water Commission are fully decentralized and some proof of this is the fact that the office of the Director of Operation in Kingston number five persons although the total number of employees in that division is about 1600. However, we still have a far way to go in solving the problems of our relationship with the local communities.

In the southern half on the island where farming is faced with drought problems, we have a constant conflict with consumers who insist on using domestic water supplies for irrigation on a larger scale than assumed at the design stage. In one area, Pedro Plains, we built a new water supply only to find that consumers regarded this as the answer to their need for irrigation water in the dry season. The new system proved a cheaper substitute to buying water transported by trucks. In an adjacent area Bull Savannah use for irrigation purposes at the lower elevations has deprived consumers at higher elevations of a reliable supply.

Perhaps we have been guilty on two counts, not taking enough cognizance of this need for irrigation water at the design stage and secondly by not being able to persuade the consumers of their responsibility for proper use of the system. We are, however, pursuing the development of an irrigation system for the Pedro Plains area.

The consumers in Jamaica are not without their own methods of drawing attention to their needs, often in face of water supply employees who appear to be insensitive to their representations.

They usually approach the Parish Councillors or Member of Parliament as they have been accustomed to do over the past decades. Their representations are then passed to NWC sometimes through the Minister to whom we are responsible.

There are also other avenues for their representations. Jamaica is a small country and communication is not too difficult. One finds therefore that water supply problems are given much publicity on radio and in the press, sometimes even before the agencies have had a reasonable time to respond.

It might appear that I have spent too much time explaining our organization structure but this balance between community contribution and agency support will be achieved only if we so organize our operations and are prepared to adjust to ensure efficient operation and adequate response to community needs.

The primary objective of the International Drinking Water Supply and Sanitation Decade can be stated as the provision of access to safe drinking water and adequate sanitation for all people by 1990.

It was appreciated by all countries and international agencies that to achieve these objectives the means must be found to stimulate construction of water supply and sanitation facilities on a large scale, especially in developing countries. This would obviously require increased financing from international sources and more important, from the developing countries which themselves would be expected to provide the bulk of the investment funds. One very significant feature is that Decade activities are now taking place in an economic climate which, especially in developing countries, has deteriorated rapidly in recent years.

The programme for expansion of construction in the field of water supply and sanitation thus faces several problems:

1. the constraint of limited funds for capital investment in face of competing demands from other sectors;
2. the high level of capital investment now required in the water and sanitation sectors where the effects of inflation, high interest rates and the declining terms of trade have meant steep rises in the per capita cost of investment;
3. the high cost of energy requires solutions which are sensitive to this problem;
4. growing scarcity of resources of water which can be developed at reasonable costs;
5. increasing bacteriological pollution of sources and higher turbidities as water resources are effected by increasing population pressures (deforestation and settlement in watersheds);
6. greater difficulty in maintaining the greater number of supplies and retaining financial viability.

Further to achieve the objective of the Decade we must now provide better water supplies for less accessible and less favoured areas - the deep rural areas, low income urban fringe communities and areas with severely limited resources of water. Some of these new systems, given these factors, will not be viable and will require a significant element of subsidy.

In many countries more and more financing has to be channelled into refurbishing and maintenance of existing facilities, often at the expense of new construction. If we are to achieve the objectives of the Decade, we must find a way to maintain the existing systems without unduly handicapping the efforts to bring drinking water and sanitation within the reach of more and more people.

On the other hand it would be pointless to be able to quote impressive statistics which show many more persons as having access to potable water if existing systems are allowed to deteriorate seriously.

Water supply agencies must therefore face the challenge of reducing to the minimum the deficit on operations while at the same time recognizing that the consumers have a limited capacity to pay.

Current policy in Jamaica is to provide water without charge through standpipes for persons who are unable to pay and/or where the limited source capacity cannot support individual service connections.

The general trend is to reduce to the minimum the number of standpipes which produce no revenue and which we do not consider as a satisfactory means of providing potable water.

However, in order to keep water within the reach of the majority of consumers, a tariff structure is applied which favours those in low income groups. For the first 3,000 gallons per month per connection the unit cost is about one-third of the corresponding rate for consumption over 12,000 gallons per month per connection. This rate structure based on the cross-subsidy principle is applied universally throughout Jamaica.

We still face the challenge of persuading all consumers of the necessity to pay for water and of being able to collect from them.

Policy up to recently has been for all consumers with individual connections to pay for services on the basis of measured consumption, i.e. by metering.

The application of metering is often expensive and the collection machinery difficult to enforce. We estimate that in low income areas the cost of billing and collection on a metered basis can be as high as 40% of revenue and when one takes into account low levels of collections in those areas, the only sensible conclusion is to apply a flat rate of charge.

We thus find ourselves in a dilemma - how to reduce costs and yet minimize waste and misuse in the absence of a charge based on the volume consumed. These problems are intensified in urban fringe communities where the urgent need for water supply and sanitation services often coincides with a basic inability to pay.

1. The people who live there possess few skills which are in demand and thus unemployment is high;
2. In Jamaica a large number of households, over 30%, are headed by women and in urban fringe communities unemployment among women is over 40%;
3. The availability of certain services, such as a reliable water supply, is considered as a social obligation of "Government";
4. Application of sanctions for non-payment is often met with hostility or non-compliance.

We therefore need special arrangements for charging for water in such areas as well as the deep rural areas where consumers tend to be widely dispersed. Hence the proposed use of the flat rate system of charge to most consumers and a monitoring of use by retaining a bulk flow meter on the main supply pipeline to the area. Where considered necessary, specific consumers will be metered.

A further problem we have had to face is the result of the policy of granting service connections only to the owners of premises. In this way water remains a charge on the property. However, in the past especially when government housing schemes are developed, these are often occupied long before titles to the property are issued and occupants are not accustomed to making direct payments for water. In many urban areas a large number of households lease land from an owner who pays for the water supplied and makes a charge on each occupant. In both cases, non-payment by the occupiers can result in problems for the National Water Commission in collection of water bills.

In response to representations and in an effort to correct this situation, arrangements are now being made to accept applications from such persons with the consent of the owner.

While there has been increasing acceptance of the importance of community participation in the development of water supply and sewerage schemes, opinions vary considerably on the methods to be used for involving the community.

One approach is to involve the community in giving free labour on the construction of projects and recruitment of the operators from the local community. I believe that in some countries this has been highly successful.

In Colombia free community labour constitutes up to 20% of the cost of projects built under the slow sand filtration programme, is part of the basic agreement with the community, results in lower costs for water supplied and thus is in the interest of the users.

In Jamaica the provision of free labour and other resources would be of little direct advantage to the community, except possibly where standpipe services are provided, since we use a uniform rate structure and the consumer will thus pay the same amount regardless of the input of resources into either construction or operations.

The delicate balance between community contribution and agency support will vary from country to country, and further within each country depending on the type of community involved.

We in Jamaica have tried to address this in several ways. Let us again go through the various stages which I have discussed.

1. By adoption of a flexible attitude and being prepared to adjust to accommodate the needs and wishes of the community.
2. At the initial development stage, we are trying to obtain information from local inhabitants and have thus tended to use our own agency resources for such investigations as opposed to using Consultants. The objective of the consultants may be to provide a technically advanced system rather than one which is attuned to the particular situation. We thus hope to avoid repeat of projects where the source of supply proved to be only one-third of the estimated capacity adopted for designs which could have been prevented by consulting the local population.
We can hopefully provide more for agricultural purposes where the need exists and will in any event be imposed on the system.
One can site numerous examples of problems due to non-consultation with the local community.
3. Information on plans can be provided and discussed with local people provided that a suitable means is found.
One of the slow sand filtration projects in Jamaica was at Endeavour, an essentially rural area. There we joined with the local health agencies and used the already existing community health programme for contact with the community regarding the water supply project and promotion of public health education.

4. At the construction stage, although there is no specific effort to obtain free labour, established policy is that labour employed on the project, except for specialist skills, must be engaged locally and the construction stage thus provides local employment.
5. In the area of operation we generally employ operators locally as long as they have the required qualifications. The decentralization of our operations means that we can respond promptly to problems and contact can be made at the local level.
6. Finally, we hope to expand our public relations programme to provide information to consumers, to encourage them to look to NWC in order to air their grievances and to establish the Commission as not merely a reservoir of technical skills but as a sensitive and responsive agency.

So far I have said little about the specific objective of the effective involvement of women in water supply and sanitation projects as far as Jamaica is concerned. The structure of our society is based on the total and equal involvement of women in all aspects of public life. However, we recognize that based on the contact through community health programmes and schools, it is desirable to exploit these channels, with the cooperation of the Ministry of Health to bring across the message on water supply and sanitation.

Let me conclude with a word of warning. Much of what I have said represents our hopes and aspirations for water supply in Jamaica and not a success story but I trust that this has indicated to you how in our special way we have tried to achieve this delicate balance between community contribution and agency support.

Appendix V

Women, water and waste: key(s) to integrated development

Presentation by Ms Mary Elmendorf

Mr. Chairman, fellow participants, it is indeed a pleasure to help IRC celebrate its 15th birthday by talking about women, water and waste something I really believe in. It was heartwarming to hear the Minister define the issues so clearly and to know that people in the Netherlands are taking the roles of women in the Decade so seriously. I will share with you some of the major points in the paper "Women, Water and Waste: (Key(s) to Integrated Development" which I prepared for today - including three charts which I am sharing with you now.

In the three charts you will see, in Chart I women as the focal point in the delivery of basic services at the local level. Then there is a list of fields of Women Studies related to water and sanitation in Chart II. In Chart III we can see the various sectors related to water and sanitation. Then we will review briefly women's roles in watersupply and sanitation.

As noted in the background paper for this conference, promotion and support of women's participation in the International Drinking Water Supply and Sanitation Decade (IDWSSD) will "help women to gain more respect and to become (more) valued members of their communities and also ... enhance their self-awareness and their position in society". I think, however, that these personal results are much less important to the women and the world than the fact that women, through their participation in improvements in water and sanitation, can become key parts of integrated community action for social and behavioural changes which can increase the health impacts and simultaneously the quality of life for both themselves and their families. At the 1975 UN Conference in Mexico City, the women from the developing countries made it very clear - and they have reiterated often at follow-up meetings - that their first concerns are improving the situations in their homes and communities. In many parts of the world both "basic needs" (services) and appropriate technologies are still daily concerns, particularly of the women. A vicious circle keeps many women coping daily for water, fuel, food and shelter. Often there is not enough time to learn about ways to shorten their daily hours of drudgery through more appropriate technologies, such as improvements in water and sanitation. Can linking women, water and waste (sanitation) be a key to development? to a better life? If so, how? This is the focus of the talk today.

Some reports have noted that the positive health impacts of water and sanitation projects could only be achieved in areas with medium incomes and literacy. Such limitations are unacceptable to many of us because too many people would be left out of that process. Too many of the millions of babies dying each year would continue to die. Too many mothers would continue having and caring for more sick children.

On Chart I the intra-inter-relationship of women to the delivery of basic services at the local level is clear. Today we will examine women as the focal point where all the sectors interlock - in reality the role of most rural and many urban women play in their homes and communities. Using this as a model we can discuss where/how our projects relate to others and what

we can learn/share. From the beginning, we should point out that we are not discussing "women's activities" as separate, but attempting to focus on women as active partners in community participation - no longer the invisible actors.

In order to discuss this we need to do two things:

- 1) review some of the literature and projects on women and development, not specifically focussed on water supply and sanitation, to point out its importance and relevance.
- 2) Make some generalizations about how women, water and sanitation can be keys to health and integrated development, missing elements in much other sector planning.

Fields of women's studies related to water and sanitation

We need to examine existing studies and reports to recognize constraints to better involvement of women, and see how women's participation has been obtained, can be increased, and how to measure beneficial impacts to women and their communities. We need to look at impact in broader terms than health or income. We need specific case studies - national and sectoral. We also need careful baseline data and longitudinal and ongoing thorough project evaluation.

We can look for some of our answers in a number of closely related fields which have sprung up during the last decade during which women's studies have been given new importance as illustrated in Chart II.

We can thus select useful concepts, methodologies and findings on which we can build our own action research and projects. In some of the literature, water and sanitation may not be mentioned specifically, but relevant, approaches or techniques can be immediately useful or may need modification to fit the local culture and/or the project.

There are, however, few longitudinal studies which address this issue at the local subsistence or near poverty level where most of the IDWSSD projects will be concentrated. In Nepal such data has been collected and analysed.

In Women and the Subsistence Sector: Economic Participation and Decision-Making in Nepal, Acharya and Bennet noted:

The need to use income generation as an entry point can hardly be over-emphasized. For most women participation in traditional programmes in health and family planning, education, nutrition and child care, etc., is a luxury they cannot afford. Unless the time women spend away from household and agricultural chores can bring in some visible contribution to family income, neither they nor their households will feel that the time is justified. Time is in fact a crucial issue for women. With an average female work burden of 10.81 hours per day (compared to 7.51 for men) rural women have no "spare" time. Hence, workload of women as well as the seasonal variation in their work loads and their daily activity schedule should be kept in mind and efforts to develop labor-saving village technologies should be intensified...

This is the crucial point at which more accessible water, as a time and labour-saving technology, can make a difference to women's status, roles and health, but there is very little research to document this. There are some projects which show that when income-generating activities are made available in combination with the introduction of labour-saving village technologies, saved time and energy can be channelled into more productive

activities. Acharya and Bennet also pointed out that "Women's increased visible contribution to the household, especially if it is in the form of cash, usually brings them greater decision-making power in domestic allocations of fund". This means that women potentially can influence spending of money for operation and maintenance of water supply and sanitation systems. In fact, research findings clearly indicate that women allocate more of their earnings to household improvements than men.

The goals of the Decade are more and safe water, not just more wells; more and better sanitation, not just more latrines. Engineers know how to design appropriate systems. But, how to assure that they are used, maintained and continue to operate is still the problem. Account must be taken of the human elements - the operators of the system, the designers and planners, and most importantly, the users of the systems.

We must go beyond access to improved water and sanitation systems to the socio-cultural factors which influence their acceptance, rejection or misuse. In order to understand these constraints and motivations, we must have access to women and women must have more than access to the new facilities. They must have information, peer support and community involvement in the whole process.

Today we should go beyond the rhetoric of women's participation as a key to improving projects, and suggest ways that training and education can make this potential a reality in achieving Decade goals.

Community Participation and Involvement of Women

The need for community participation for successful improvements in water supply and sanitation is well known and increasingly accepted, but the importance of women's involvement as a part of community participation in order to achieve programme objectives is less evident. How to relate training to these two objectives is even less understood. In the beginning, we should say that our objective is not to segregate the women but to search for appropriate models for adult learning which will be most effective in increasing total participation of men and women to increase effective utilization of improvements in water and sanitation. By recognizing women as primary managers of water and human waste, special training materials and workshops can be designed which will give them needed information to perform their old roles better and their new roles more effectively. The training itself will enhance their status by giving importance to their many water and sanitation related tasks as mothers, wives and community members.

The tasks women carry out relation to domestic water and household sanitation draw on four key roles:

- Women as acceptors of technologies - traditional, old and new
- Women as users of improved facilities
- Women as managers of water supply and sanitation programmes
- Women as agents of behavioural change in the use of improved facilities.

It has been pointed out that we need to think of women as both producers and consumers of water and sanitation.

Let's examine a few examples of the various roles.

Women as Acceptors

Many projects have failed because women have not been involved in planning. For instance, new facilities have not been accepted because siting of wells and pumps did not take into consideration neighbourhoods of minorities (India, Sri Lanka Tanzania). The women who must share such pump facilities will return to traditional sources rather than face ostracism, or even slights, from other women (Salvador). Social costs are too great. Engineers and the community together can resolve the social and technical problems. For instance, in Guatamala, in a gravity-fed system when there was only enough water for every three houses to share, siting was worked out by mutual consent of the families using a bicycle wheel and posts with flags to identify a pattern of distribution for standposts acceptable to the women and the engineers.

In both Indonesia and Kenya reports on community defining of neighbourhoods instead of imposition of squares increased use and acceptance. Sharing of rain-water collection has also been reported in several countries.

Women as users of the new facilities have many decisions to make in changing from a traditional to a new sources. Time and energy expended are key factors, but there are other considerations such as taste, smell or colour.

Combined with the social costs mentioned above, usually the closest source is chosen but waiting a turn at a pump may be considered much more difficult than equal time spent walking to a traditional source. This is further aggravated if the pump or standpipe only has water at certain times - when the old source was always available. In Thailand, the pump waiting time was reduced by installing two or more pumps on the well. This simple solution also meant that with a pump breakdown there was a space available so that the tendency to break the well cover or return to open wells was reduced. As noted in the Tanzania project, once a new pattern is built up it is usually adhered to. Improved sources, once accepted, are in general used continuously and exclusively.

We have just learned about the study of hand pump caretakers in Bangladesh where 121 women and 377 men were interviewed, in a project with over 6,000 tube wells. The data show that of the pumps cared for by women only 3% are broken compared to 5% of the ones cared for by men.

Also, broken pumps were repaired more quickly by women than men and well sites were cleaned more often and more thoroughly (Danida). This is the first report of an evaluation of women as primary health caretakers but we hope to have more information from projects in Bolivia and Sri Lanka.

In Tegucigalpa, Honduras, a women's group in a hillside slum organized the community to obtain potable water by raising money to extend the pipeline from a neighbouring community. Four standpipes were installed, two at the top of the hill and two halfway down to serve the 800 families. Two small wooden huts were built to house the standpipes, and a women water manager was hired to keep each house open 5 hours a day, one in the morning, one in the afternoon. She collected a set fee for each container and turned the money over to the committee which paid her a salary. The job was rotated among the women who were heads of household.

Women as managers

Anecdotal material is available on cases where women have been trained and have successfully operated, maintained and repaired pumps (Bangladesh, Bolivia, Sri Lanka), have worked as water source monitors (Angola), have been selected for training as mechanics (Mali), and have carried out monthly disinfection of wells (Columbia). Perhaps women are not the best personnel everywhere but they should be considered as primary human resources as we evaluate past failures in operation and maintenance.

Women's traditional roles as managers of human waste both in their homes and communities cannot be over-emphasized. There is an excellent case study from Samoa where since the 1950s women's societies had been responsible for an effective environmental sanitation effort, supervising household and community waste disposal as volunteers. With the inauguration of primary health care young men were trained as sanitarians and sent out to the villages as paid workers. The women's efforts were not recognized, their status was eroded. The young men stayed only a short while. Sanitation is worse now, not better than before. One can imagine what might have happened had the training been for the women.

Women as agents of change

Even though the oral-faecal reinfection route is well known, there has been very little designing of facilities and effective health education to help break this vicious circle. Until women's involvement as a part of total community participation is applied to breaking the oral/faecal route of infection very little will happen.

The widely held belief that children's faeces are "harmless" (John Briscoe Icoart conference, 1980) can be a continuing link in chains of reinfection, whether the faeces are thrown on a nearby garbage heap or baby diapers are washed with dishes in an urban home with a newly installed sink. These practices and perceptions should be understood and analysed as part of the preparation of messages for communication and training. Evidence shows that as mothers begin to understand the dangers of infant faeces - not necessarily the "germ theory" but the cause/effect relationship between sanitation and diarrhoea - they will change their habits, if acceptable options are available, but training of trainers for women as trainers of their families are necessary. I have just heard a little about the project in Imo State, Nigeria, where local level training is going on. Training or consciousness raising in India has also had positive results.

Appropriate ancillary equipment

Appropriate ancillary equipment combined with behavioural change is an integral part of all improvements in water supply and sanitation. Often technicians and planners assume that communities and households have what is needed and know how to use the improved facilities. To give an example, knowledge of the complete chain from faeces to hand washing, to soap to drying, to appropriate disposal of cleansing materials and sullage is often assumed. The linkages between behaviour and technology must be stressed and incentives for change provided. Women are the agents for change, the socializers of their families, the trainers of their children, who can help bring about the new habits in personal hygiene.

Technical change/development

All improvements in water supply imply technological and behavioural change. Since some of the greatest needs of the IDWSSD are those involving portage, storage and improvements in utilization of water along with behavioural changes in defaecation patterns, "Appropriate technology" must not be left completely with the engineers and planners.

To ignore discussion of "appropriate technology" and women's roles in relationship to its design and use would be negligent. Appropriate is the process not just the technology. It is not a type of technology but a kind that fits the local needs, and local needs must be articulated. Real need moves from desire to demand. Articulation of need and participation define appropriateness. Access to channels of knowledge facilitates articulation. A two-way communication or dialogue, is necessary to assure that the technology fits the local specifications, physical, ecological and cultural. Then incentives, motivations and sanctions can be developed. And women must be a part of the process.

A redefinition of tasks and roles

Even though understanding the many traditional roles of women as primary users of water and managers of human waste is important, the more important problem now is how to use this potential so that women can be responsible for the overall operation and maintenance of the new systems in their communities and in their homes. All too often there is a tendency to underestimate the extent to which women's roles can be increased and changed to bring benefits to women, their families and communities.

Sex-stereotyping of new roles often restricts women's full participation. Much can be done about education, consciousness-raising and training, so that the traditional roles of women are incorporated into operation, maintenance and effective use of new facilities. For instance, women in Sri Lanka are not only being trained to take care of pumps but to manufacture them as well (IDRC).

Conclusion

In concluding, I want to make it clear that I fully realize that this paper represents my own interests and biases. Each of you will hopefully have new linkages to add and may wish to eliminate some I've included in Chart III. I do however want to come back to the importance of linkages.

By suggesting that we place the local Decade, Men, Women and Agencies, within a broad contextual framework of women in development and in new approaches to research on community participation and communication, hopefully we will be able to demonstrate particular linkages of women's roles in water supply and sanitation to: better nutrition, to improved health, to better housing, to increased energy and to higher quality of life with sustained productivity.

By an integrated approach to community-defined needs, women, in groups and singly, will be motivated to adopt new patterns of behaviour and attitudes so that the active and passive layers of women's participation in various sectors will be strengthened. Peer support will help to make this possible. Activities which synergistically will improve the health and welfare of women and their families in the most disadvantaged sectors of the population can become possible through improvements in water and sanitation which allow women to more fully participation development activities.

CHART I

WOMEN: THE FOCAL POINT IN COMMUNITY ACTION FOR
THE DELIVERY OF BASIC SERVICES AT THE LOCAL LEVEL

WATER SUPPLY AND
SANITATION

PRIMARY
HEALTH
CARE

TECHNOLOGICAL
CHANGE, DEVELOPMENT
INCLUDING
IRRIGATION

HOUSING
AND HOME
MANAGEMENT
(WATER, FOOD,
FUEL)

EDUCATION
COMMUNICATION
LEARNING

FOOD,
AGRICULTURE
AND NUTRITION

PRE-SCHOOL
CHILD DEVELOPMENT/
TRAINING

INCOME GENERATION
AND/OR PRODUCTIVITY

Source: Adapted from Community Development Department, Ministry
of Interior, Thailand, Annual Report, ASEAN-WID. July 1982.

CHART II

Fields of Women's Studies
Related to Water and Sanitation

<u>Field</u>	<u>Findings/Methods/Technique</u>
Women & Development	Roles, Status Decision-Making Time-Use Allocation
Women & Health	Primary Health Care Maternal Child Health Diarrhoea Prevention & Cure Oral Rehydration Therapy Hygiene Education Environmental Health Nutrition
Women & Technological Change (To Meet Basic Needs)	Diffusion Acceptance Adaption
Women & Education/ Communication	Demonstrations "Learning by doing" Participation, Planning Action and Evaluation
Women & Community Participation	Defining Felt Needs Appropriateness Involvement
Women, Health & Development	Combining the above approaches

Source: "Generalizations and linkages drawn from a Preliminary Review of the Literature on Women in Water and Sanitation," presented by Mary Elmendorf at the INSTRAW Interregional Seminar Cairo, March 1984.

CHART III

Water and Sanitation Related Sectors

<u>Sectors</u>	<u>Content</u>
Housing	Use of space Personal hygiene Environmental health
Nutrition	Wastage Mal absorption Diarrhoea Spoilage
Food and Agriculture	Changing old patterns of work, storage, preparation Time Energy
Irrigation/Human Welfare	Domestic uses of water Re-use of water and excreta
Employment/Income Generation	Labor Income generating Productivity
Technology	Technically appropriate Socio-culturally acceptable Affordable financially
Education	Communication Community participation Training

Source: "Generalizations and linkages drawn from a Preliminary Review of the Literature on Women in Water and Sanitation", presented by Mary Elmendorf at the INSTRAW Interregional Seminar, Cairo, March 1984.



Appendix VI

**Case studies on community
participation especially women
in water and sanitation projects**



VI-I Case study from India by Ms M. Arole, Comprehensive Rural Health Project (CRHP)

I have been working with my husband in a rural community health project in the past 14 years. We started this work with the idea of finding a proper, more relevant health care delivery system for rural areas and when we started the main principles on which we started were, community participation and delegation of most of the responsibilities of health care to people who are lesser trained, mainly nurses and village people themselves.

When we went to the villages and asked the people what their priorities were. They of course said: water, food, education, employment, shelter, and they never said anything about health. So, immediately our own ego was deflated and we decided that we should do something about this. But as you know, water is so closely related to health, and so we had a common point. It so happened that we went to that area during severe drought and water indeed was a problem.

The first thing we had to do was to see what we could do. In our discussions with the community, the first thing that came up was that the Harijans (untouchables) would come to us secretly and say 'whatever you do, we are not going to get the water'. On the other hand, we knew that if we went directly to the Harijans the first thing the community would do was to throw us out. So we had to have a strategy and what we did was that we called a water-deviner and told him "you walk through the whole village but be sure you find the water in the Harijans section". So when the high caste people came, we said "the water deviner said the water is only available there, it is not our decision", and so in that way we were able to get the water to the children, to those people who needed it most. So much for water.

Coming on to the health programme, we realized that health education was the most important thing in primary health care. How can we change people's attitude, how can we get people to get rid of their superstition? And through our discussions with the people, we realized (they told us actually) that unless we would choose one woman from among them we were not going to get anywhere. And so we asked them to give us a woman and in most of the villages the only woman who was available was illiterate. Usually she was a middle-aged woman having had life experiences and she would come once a week to stay in our centre for 24 hours to receive training in different health subjects.

Since it is a very comprehensive health care project that we envisaged, we started with maternal and child care and went on to family planning, control of leprosy, tuberculosis, prevention of blindness and rehabilitation of the handicapped, in addition to general hygiene and other preventive measures. Very rapidly we found that these women were highly intelligent and very keen. The result was that every week they would come in, we would give them a little education, they would go back and share their knowledge with all the women in their village.

Within six months, the villages in which we had women had a tremendous change in the attitudes. Family planning was widely accepted. The nutrition education had penetrated too and maternal and medical care were accepted as well; and since the women were trained in midwifery, safe deliveries were also possible. In the education we found that safe drinking water, even though available, was not accepted by the women, and therefore we had to have a lot of sessions on the use of the tubewell. The result was that these women were really able to communicate with the other women. Then the time came when they said that one woman is not sufficient; we should organize them and so we decided that we should have women's clubs, Mahila Mandars.

One of the things that attracted these women was, as our previous speaker said, economic employment schemes. This really attracted women to come together. They came together to organize what we call "chit" funds where women contribute one rupee or whatever they can afford. This is collected and handed out in rotation to the women who are in greatest need. Later, the women came together and when they were organized, they were recognized by the banks as groups who could stand security. So, women started going to the bank, getting loans to start small income generating projects. Side by side the Mahila Mandar members were given a lot of health education and they became the arms of the village health worker in conveying health education. The result of this was that they started to understand the importance of sanitation, the importance of water. As an example of what they understood, in one village, the Panchayat (the village council) refused to have a good drainage system and have soakage pits. The women went on demanding and the village council just would not listen. So one day, the Mahila Mandar women got up in the middle of the night and in front of each household they dug a big pit for the water to drain so that the soakage pits could be completed later. When the villagers woke up in the morning, the streets were just dug up with big pits, and the bullock carts and other vehicles could not pass through. So the village council called a meeting with the women and asked them what they had done. They said: "Our children and your children are unhealthy, they are getting malaria because of the bad drainage system". "Now we have started the work, you go ahead and complete the soakage pits". And of course they were obliged to do so.

The women's groups have become very active, quite powerful, some of the women have been elected to the village council, some of them have become head-women. The result has been, that in these villages (and we are working in 200 villages) covering a population of 300,000, the infant mortality has come down from 180/1,000 to 18/1,000. The birth rate has also steeply come down because of this extensive health education. Today, it is even so that in some of these villages, apart from the women and the men knowing health education, even the children, the five year olds and six year olds can tell you all about it. They not only know about safe drinking water and sanitation, but also about oral rehydration, how to conduct a safe delivery, what to do when the placenta does not come out and things like that. So I sincerely believe that community

participation is a "must" and extensive health education and the opportunity for communities to plan, implement and evaluate their own programmes is very important to succeed in improving the health of our people.

VI.2 The Imo Project Model; a case study from Nigeria by
Ms Aig-Ojihomon, UNICEF, Lagos.

The Imo Project Model

Clean drinking water and safe means of excreta disposal are scarce in most of rural Nigeria, too scarce to support an acceptable level of health. Because of this, UNICEF and the Government of Nigeria have embarked on a grass-roots approach aimed at changing water-use and sanitation habits at the village level and at fashioning a country-wide model.

This approach, called the Imo Project Model for the state in which it began in 1981 (but it is now being replicated in Gongola and Kwara State), features borehole hand pumps, improved pit latrines, community mobilization, and the training of village-based workers VBWs. It has low per capita costs and its goals are simple: a. to improve the quality of life in the rural areas of Nigeria; b. affordable implementation for the states; c. a drastic reduction of the national infant mortality, now recognized at 200 to 250 per 1,000 in the first two years of life. It is a multisectoral project, involving the close cooperation of several ministries.

The Imo Model, now being implemented in three states and scheduled for three others by 1985, carries the objectives of the International Drinking Water Supply and Sanitation Decade. The Decade calls for safe drinking water and adequate sanitation for all by the year 1990.

Three convictions underlie the Imo Project Model. The first is that in present-day rural Nigeria, pipe-borne systems are too costly to construct and, beyond that, too vulnerable to power failure and mechanical breakdown to have any chance of delivering drinking water reliably to the majority of villages.

The second conviction is that approaches like the Imo Model can help poor rural communities to attain, relatively quickly, a level of hygiene one would normally associate with much better-off urban communities. The physical well-being of the rural poor does not have to depend entirely on the gradual "trickle down" benefits of national economic development.

The most pressing aim of the project is to cut down the causes of early childhood diarrhoea, virtually all of which are related to unclean water and poor hygiene. Diarrhoea is a scourge of infancy in almost all developing countries, and it is the immediate cause of half of all the infant deaths. It combines with malnutrition and other infectious diseases to bring about the deaths of an estimated 1,000 Nigerian children each day.

The traditional roles of women in water management and waste disposal in Imo state

Women are the main water collectors, water users, environmental sanitarians and guardians of personal hygiene within the family. The fetching of water and waste disposal are considered the lowest of menial tasks which are soon delegated to children, especially daughters and maids, where possible. Where there are no ponds, wells streams or springs for miles around, women begrudge the many hours they have to trek each day to the nearest water source as hampering their other household and economic activities. As a result, they limit the amounts of water used in the family to about 6 litres per person a day. Under such circumstances, the quality of the water no longer matters, and where water-tankers ply the roads with water for sale, women are prepared to pay exorbitant amounts for a few buckets of water.

On the other hand, the society places a high premium on body hygiene and clean clothes, especially for adults and small children. Excreta are disposed of in either log latrines or in the bush as more safe and less smelly. Infants excreta are considered quite harmless and are frequently found inside the house or in the yard, as the wearing of nappies or potty-training are not part of the traditional child-rearing pattern. Drinking water is stored in porous clay-pots, not to keep it separate for contamination, but to keep it cool in a tropical climate.

Women as acceptors of facilities

Because of the daily drudgery of water-fetching, women see the hand pumps first of all as a time-saver, and secondly as providing them all the year round with generous amounts of water for all purposes.

In order for the project to have any significant health impact on children, it is necessary, however, that women also come to accept that they have to keep the water clean from the pump to the mouth, the need for adequate excreta disposal as dangerous to health and improved body hygiene under tropical conditions. Water is the entry-point of the project, but an equal amount of time and money is spent on village mobilization, the construction and training in the construction of low-cost, ventilated, improved pit latrines, health education at the grass roots, and the monitoring of health effects and changes of behavioural attitudes in the project implementation, plus the maintenance of facilities once installed.

The training of men and women as village based (health) workers.

After the initial community mobilization to raise general awareness of what the project is all about and to get the whole traditional social structure involved as project participators, not just beneficiaries, village steering committees are set up in which at least three local women leaders are members. Then the community with the steering committee are asked to select individuals (one man and

one woman for every 500 - 1,000 population) to be trained as village based workers or voluntary health promoters in the village. These men and women are then subsequently screened by the mobilization team.

As health educators, they are trained in the preventive aspects of health, to share their new knowledge with the community, raise awareness and confidence that the community can solve many of its own problems, and further show the newly acquired skills, experiences and ideas by personal example. The curriculum for the training of village based workers to better water, sanitation and health habits in Imo State was developed in response to the identified needs of rural communities. These identified needs are: communication and organizational skills as innovators, first aid, water pollution from various sources, water-related diseases, purification, sanitation, prevention and control of common diseases, hygiene, sanitation, hand pump use and maintenance, infant nutrition, general mother and child care, and the importance of immunization.

All VBWs receive the same training. Follow-up studies on the project's effects seem to indicate, however, that a natural division of tasks occurs between male and female VBWs when it comes to putting their training into practice. Men are more effective to organize communal labour, to enforce environmental sanitation in public places, to look after hand pump maintenance and to build VIP latrines. Women on the other hand are more directly involved with mother and child care, improving their personal surroundings, the treatment of infant diarrhoea and weaning practices and the storage of water in the house. But though women VBWs do not attempt to assume traditional male roles after their training, they play a crucial role as child-health promoters, nutrition advisors, water users and general household managers in terms of hygienic practices. Besides this, they, just like the male VBWs, play an important part in referring sick villagers to the local health clinics for curative treatment.

Women as project and programme workers in Imo state

Women are well represented in the Imo State Rural Drinking Water and Sanitation Project. Besides myself as the UNICEF Project Coordinator, three Nigerian women play a prominent part, namely as the Operations/Liaison Officer, the team leader for sanitation education, and the training of VBWs respectively. Besides this, there are several women health educators, a woman nutritionist and a woman consultant epidemiologist to study the health impacts of the project on children. About 50% of the middle and higher personnel employed in the project are women, totally dedicated to improve the lot of women and children in the rural countryside of Imo State together with our male colleagues.

Up to date, the project has provided hand pumps for 400,000 rural people in Imo State, trained over 1,000 men and women VBWs and constructed about the same number of VIP latrines at low cost with communal but mainly male efforts.

The Imo State project was not meant to be a women's development project per sé. Instead, it is a project for women and children as the special target group for UNICEF and the more so in the developing world where they are the most vulnerable part of the population. It is the hope of this project that with the present programme inputs the life expectancy and the quality of life for the mothers and children in the Nigerian rural countryside can be brought up to the level of the rest of the population in a short time.

Background

The problem of water and sanitation is of grave concern in Pakistan and is becoming more and more crucial, due to its serious impact on the health of its populace. The importance of providing sanitation and clean drinking water to all and to rural areas in particular can hardly be over emphasized.

According to the Planning Commission, Government of Pakistan, less than two per cent people of Pakistan had sanitation facilities available in 1980.

Besides, over 50 diseases are related to inadequate sanitation.

Excreta-related diseases can be communicated through dirty fingers to our eating utensils or water, and may infect by inhalation, or through the skin. Certain flies and mosquitoes which carry infection also breed in excreta.

In the past, no special attention was paid towards the improvement of sanitation, especially in the rural areas. An analysis of various rural development programmes tried in the past, reveals that sanitation occupied only an insignificant section of these programmes. Ever since the inception of Pakistan, policy makers and planners have tried a number of measures for rural development and modernization. These include cooperatives, village aid programme, rural works programme, basic democracies, rural youth programme, peoples works programme and a number of other movements. The local councils too have been entrusted with this responsibility. But none of these experiments have yielded a programme or a model which could be effectively repeated throughout the country with a view to solve the problem of sanitation.

At national and international levels, many seminars, conferences and workshops are held on the subject. United Nations has gone so far as to dedicate a whole decade (1981-1990) for the promotion of water and sanitation especially since programmes undertaken in the past were not in line with the sanitation requirements of the community.

Since September 1981, a water and sanitation programme has been initiated by the LG & RDD with the assistance of UNICEF which stresses community education and participation to achieve the following objectives:

- provision of clean drinking water
- disposal of human excreta
- disposal of animal waste
- disposal of refuse and garbage
- disposal of waste water
- personal and kitchen hygiene.

Methodology

The programme that was prepared jointly by Punjab Government, LG & RDD and UNICEF Punjab, recommended the training of field-workers (sanitation promoters) and their appointment at marakaz level in groups of three, one male and two female. After getting this proposal approved from the government, the recruitment of sanitation promoters began in 1982.

Since then the sanitation promoters have been functioning as catalysts, coordinators, and supervisors. They also help the villagers to organize volunteers teams for:

- water and sanitation committee
- motivation team (ladies) giving them the role of 'clean':
 - C - coordinate the sanitation activities
 - L - lead the sanitation activities
 - E - educate the village women about sanitation
 - A - give them advise in construction work
 - N - keep note and record of sanitation activities
- junior teams in boys and girls school, and
- mason team, etc.

Process

Basic qualifications required of sanitation promoters is 10th grade. They are selected from the markaz, they are expected to work. Before being sent to the stations of their appointments, the selected promoters from selected districts undergo a three months training course at Lalamusa Training Institute. The training is divided in two phases:

- a) classroom training (one month)
- b) field training (two months).

a) Classroom training

The main focus during classroom training is on improving knowledge, attitude, and technical know-how of the trainees. The topics that are covered include: identification and solving of the problems, insects, institutions, food hygiene, disposal of human excreta, construction of latrines, biogas plant, cistern, soakpits, sanitary well, small water supply schemes, soap making, and community development. Special lectures are also delivered by the staff of the Lalamusa Institute on various topics relating to water and sanitation.

b) Field training

Trainees are sent to selected villages in groups that comprise of both male and female numbers. Each group is given a specific target regarding construction of demonstration and house latrines, biogas plants, cisterns, soakpits etc.

During training the promoters:

- educate the communities, and involve them by forming committees;
- educate the schoolchildren through junior team;
- educate and participate the village women in the Ladies Motivation Team.
- Participation: After the education and involvement of the local communities, 70 per cent construction of latrines is invariably through self help and community participation (they get the materials worth Rs. 300 from the revolving fund as loan which they return to the sanitation committee in easy instalments).

After three months training, promotors return to their respective districts.

So far, four training courses have been completed and 164 promotors have been trained in Pakistan, 88 w/s promotors are working in Punjab, 52 female, 36 male. 204 ladies motivation teams are working, and 328 schoolchildren in Rawalpindi, Attock, Mianwali and D.G. Khan. These training courses are jointly conducted by the Lalamusa Institute and the UNICEF. The former is gradually taking over all responsibilities.

District achievements of performance attained through self-help and community participation are as under:

Name of district	Accomplishment figures for			
	Household latrines	Biogas	Soakpit	Cistern
Jhelum	765	17	17	7
Rawalpindi	410	16	16	10
Attock	58	19	9	8
D.G. Khan	12	1	-	-
Total	1245	53	35	25

POLICY IMPACT

Within the short span of time this programme has received substantial popularity not only in the five Barani districts, where it is currently being implemented, but also in the other districts of the province, where they are requesting UNICEF for introduction of programme.

In spite of certain shortfalls which are common at the advent of a new programme, the sanitation promotors are working with interest and enthusiasm. It can therefore be safely assumed that if the promotor is assured of better future prospects and job security, the speed of progress will be accelerated. There is also a possibility of using them as multipurpose field-workers. Refresher courses and study tours are also recommended. However, before embarking upon the massive expansion of this programme, it is suggested that a nation-wide research study be conducted to evaluate the methodology and techniques in use at present.

Male and female promotors are responsible for water and sanitation projects because they are qualified persons and belong to the local community.

Male and female having the equal responsibility for the promotion of water and sanitation project, we cannot miss each one. But women are more effective than men. They can play technical role in the part of women like soap making, digging of pit.

Another benefit of women's involvement in our society, is that if one is motivated other village women automatically follow her.

Because of the purdha system men cannot enter in the house, so it is easy that women also work in sanitation projects.

SANITATION ACHIEVEMENTS OF 5 DISTRICTS OF PUNJAB (PAKISTAN)

<u>Year/Dist.</u>	Promotor trained	No. of villages	WS Committees	Motivation Teams	Junior Teams	Masons Trained	Demonstration Latrines	Household Latrines	Biogas	Cistern	Soakpit
<u>1981</u>											
Jhelum	44	4	4	4	8	20	10	287	17	6	6
<u>1982</u>											
Jhelum	-	20	20	20	40	40	40	506	18	10	20
Rawalpindi	-	20	20	20	40	45	40	570	20	12	15
Attock	-	20	20	20	40	22	40	250	20	8	10
<u>1983</u>											
Jhelum	84	20	20	20	40	60	40	617	17	7	10
Rawalpindi		20	20	20	40	30	40	363	16	10	16
Attock		20	20	20	40	20	40	210	20	11	12
<u>1984</u>											
Jhelum	36	20	20	20	20	20	20	62	9	3	3
Rawalpindi		20	20	20	20	15	20	80	-	-	-
Attock		20	20	20	20	35	35	250	5	5	10
Mainwali		10	10	10	10	20	25	105	3	-	-
D.G. Khan		10	10	10	10	20	15	90	2	-	-
Progress to 3 rd st May 1984	164	204	204	204	328	345	363	3390	147	72	102

PROMOTOR DISTRIBUTION IN FIVE DISTRICTS

	Male	Female	Total
Jhelum	14	11	25
Pindi	5	10	15
Attock	7	14	21
Mianwali	5	7	12
D.G.Khan	5	10	15
	36	52	88

VI.4 Case study from Tanzania by Ms Mary Kirimbai, Prime Minister's Office, Dodoma

In Tanzania, for the past two years, several different projects have been carried out to study community participation in water supply and sanitation. The aims of such projects have been:

- to find out if community participation, health education and sanitation components were a necessary part of water supply programme, and if so,
- how to incorporate the different components using the existing government system and staff.

The projects were carried out in 60 villages in two regions by the Prime Minister's Office in cooperation with IRC. In four other regions though, the projects were carried out in different socio-economic groups in cooperation with different donor agencies. These projects were closely supervised by the Prime Minister's Office.

In the PMO/IRC project existing community development field-staff were used to carry out the project as part of their everyday work, while in the other project the field staff (CDD) were seconded to the socio-economic groups for the duration of the project and they did the work independently of their daily work.

In all the project areas, technical departments, Community Development and Health field staff cooperated closely together to motivate the village communities to participate in planning, construction and management of water facilities, construction and proper usage of sanitation facilities, and to carry out health education and discussion group. This was carried out in the following ways:

1. In a general village meeting the need for community participation in all stages of water supply projects and sanitation facilities was discussed. Other topics discussed were the need for health education and discussion groups and the participation of women in the whole programme.
2. Village committees to organize village participation, health education and discussion groups were elected by the meeting to represent the villagers in the following matters:
 - siting of water points
 - organizing self-help labour
 - select, supervise and make sure that village caretakers are compensated
 - plan and implement hygiene improvement in the village
 - advise the village government to allocate enough money for maintenance and repair of water supply facilities
 - to see that health education and discussion groups are carried out in the village
 - to see that VCT participated in the training.

Experience with involvement of women as an integral part of the project has been mixed.

On the positive side, it was found that when the choice was left to the village, after stimulation by the CD worker (72%) one or more women were chosen for the committee. The most usual composition, in over half of the cases was three men and two women. In 28% of the cases where women were not selected, the following factors were the reasons:

- no or few women attended the meeting;
- an existing committee on Education, Culture and Social Services, which most of the time did not have female members, was selected;
- the villages are predominantly Muslim, where women do not participate in public life.

Learning from this experience, it will be important to facilitate the women to attend the village meetings.

Steps found helpful once women's attendance is assured include:

- presence of CD worker during first meeting to encourage women to give their views on the project;
- organize a separate women's meeting to educate the women on their role.

It was found that once women were helped to stand up during the meeting, daring to discuss project issues with male members, they gain self-confidence and become increasingly aware of their new role in village development.

Women as scheme attendants.

In total over 20 female caretakers are now being trained as scheme attendants. To make training accessible to women both the Finnish and Dutch supported projects introduced training programmes in the villages instead of this training to take place centrally. However, in most villages, the choice of women was made after heated discussion. In most cases the (male) village secretary declared in first instance that there were no women who could be capable of doing the job. When the issues were discussed with the women, they came up with suitable candidates who have been accepted by village government as scheme attendants.

Impact

The involvement of the committees has been most successful in siting of the water points, planning and implementing village hygiene improvements. We have, however, not yet finished evaluating on the women's involvement in water supply and sanitation projects. Did mixed committees do better in general than all male committees? The only generalization we can make so far, is that existing committees which have other tasks besides the water supply projects and which are composed of male members only did less work than the committee formed for the purpose of water supply and sanitation projects. On the preference of female versus male VCT, more studies are needed taking into account various intervening variables, such as accessibility, road system, village leadership situations, etc.

Appendix VII

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