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United Nations International  
Research and Training Institute  
for the Advancement of Women

## **REGIONAL TRAINING SEMINAR ON WOMEN'S CONTRIBUTION TO THE INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE**

**Bangkok, Thailand  
23 - 27 January 1989**

**organized by  
the United Nations International Research and Training  
Institute for the Advancement of Women  
in co-operation with  
the Economic and Social Commissions for Asia and the Pacific**

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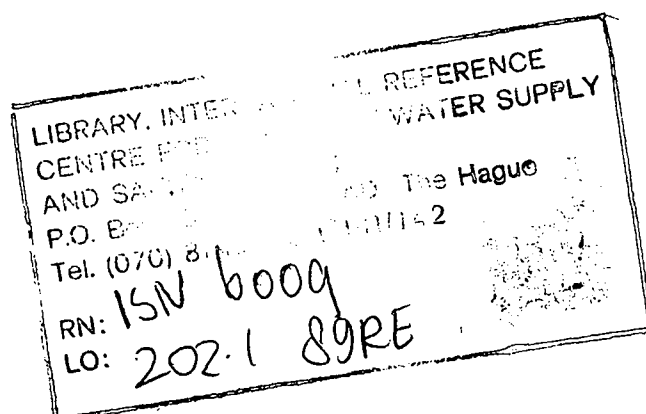
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## I. INTRODUCTION

The Regional Training Seminar on Women's Contribution to the International Drinking Water Supply and Sanitation Decade (IDWSSD) was held in Bangkok, Thailand, from 23 to 27 January 1989. The seminar was organized by United Nations International Research and Training Institute for the Advancement of Women (INSTRAW) in co-operation with the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), using the multimedia training package, "Women, Water Supply and Sanitation" prepared by INSTRAW and ILO/Turin Centre.

The seminar was attended by 25 participants from the following 15 countries: Afghanistan, Bangladesh, Bhutan, Burma, China, India, Indonesia, Lao People's Democratic Republic, Malaysia, Nepal, the Netherlands, Pakistan, Philippines, Sri Lanka and Thailand (See Annex I). Twenty-two observers and other participants from 13 agencies and organizations within and outside the United Nations also attended the seminar (see Annex II).

### A. Opening of the seminar

The seminar was officially opened by the Deputy Executive Secretary of ESCAP, Mr. Koji Nakagawa. In his opening statement the Deputy Executive Secretary expressed satisfaction at the excellent level of co-operation and collaboration between ESCAP and INSTRAW in organizing this seminar. He expressed confidence that this first collaborative effort between ESCAP and INSTRAW would pave the way for joint implementation of other projects and programmes in the future by these two United Nations bodies. Mr. Nakagawa noted that the United Nations General Assembly had on a number of occasions encouraged co-operation and collaboration between the various United Nations organizations and agencies in implementing their programme activities. He mentioned that such collaboration not only eliminated unnecessary and costly duplication in the activities of these organizations, it also helped achieve the ultimate goal of providing effective services to the member governments in the most cost effective way. Mr. Nakagawa expressed satisfaction at the level of collaborative project implementation between ESCAP and other United Nations and international organizations and hoped that in the future this would be enhanced even further.

He emphasized the importance of the seminar by stating that the seminar dealt with two very important aspects of human life, namely the need for safe and adequate drinking water supply and sanitation services, and the role of women in this important sector of development. He noted that according to some forecasts, by the year 1990 some 1,200 million people in the developing world (excluding China) would still be without safe and adequate drinking water and 60 per cent of these people would be in the ESCAP region. He further noted that lack of clean environment and safe drinking water was the cause of some 13 million infant mortalities every year in the developing world. He pointed out that these statistics underscored the importance of this vital socio-economic and health aspect of life. He noted that women's role in providing safe and adequate

drinking water and a clean environment around the home was a very important one and that in playing this role women could make a significant contribution to the implementation of the activities of the IDWSSD. He also emphasized the need for training women at all levels so that they could be fully involved in the activities of water supply and sanitation. He noted that women in many countries of the ESCAP region constituted more than 50 per cent of the total population and therefore efforts should be made to involve them fully in all aspects of development including health, education, water supply, sanitation and other infrastructural services.

Finally, he thanked INSTRAW for collaborating with ESCAP in organizing this seminar. He also acknowledged the contribution of ILO/Turin Centre in preparing jointly with INSTRAW the training materials to be used during the seminar. He thanked representatives of all other United Nations and international organizations for participating and contributing to the success of the seminar.

B. Opening statement by the representative of INSTRAW

In her opening statement, the representative of INSTRAW, Ms. Stephani Scheer, also welcomed the participants in the name of the INSTRAW Director and staff, to the joint Regional Training Seminar on Women's Contribution to the IDWSSD. She said that INSTRAW was very grateful to ESCAP for the opportunity to reach countries in Asia and the Pacific region by providing a forum and organizing this activity. She expressed appreciation to cooperating agencies and organizations, particularly the United Nations Department of Technical Cooperation for Development for contributing the time and expertise of a resource person, Ms. Marcia Brewster. She especially thanked the participants and their governments for the enthusiastic response and obvious commitment to fulfilling the objectives of the Decade.

She noted that it had taken years to establish the direct link of women to water and sanitation. Women had tended to be considered only as end-users - the last in the line of receivers; seldom as decision-makers, agriculturalists, hydrologists or other skilled personnel who could have a positive influence in the type of systems and services they needed most.

Now, though, a major change was taking place. Almost at the end of the Decade, women were finally becoming legitimate actors and agents. Finally, involving women had ceased to be an empty phrase and become an urgent need.

Why were women being singled out, she asked - because women took water and sanitation issues to heart. Because where there was no drinking water, or running water, women spent hours hauling water for many uses and caring for children sick with water-borne diseases.

Women as the main carriers, users and managers of water, bore the burden of the lack of safe drinking water and sanitation. They had a vested interest in securing these things for their families and communities. That was why, she stressed, women were nothing less than the definitive link for the success or failure of the IDWSSD.

In closing, Ms. Scheer expressed confidence that the outcome of the seminar would not only be a successful one, but one that would be meaningful.

C. Election of officers

The following participants were then elected as the officers of the seminar:

Chairperson:	Ms. Josefina N. Ruiz (Philippines)
Vice-chairpersons:	Ms. Hira Sharma (India)
	Ms. Tinny Suryani (Indonesia)
Rapporteur:	Ms. Daw Than Than (Burma)

D. Adoption of the agenda

The agenda of the seminar was then adopted (See Annex III).

E. Adoption of the report

After the presentation of all modules and both general and working group discussions, the report of the seminar, including all recommendations adopted at the seminar, was adopted by consensus.

F. Closing of the seminar

Following the adoption of the report, a closing ceremony was held. Concluding remarks were made as follows.

The Chairperson, Ms. Josefina N. Ruiz, said that the objective of the seminar had been to increase awareness of the necessity to involve women - and at the same time to ensure their participation - at all levels and stages of water supply and sanitation programmes. The seminar had shown the participants ways in which women could take an active role in this regard. The next step was for the participants to return to their respective countries and take action to increase awareness of this necessity in their communities and to get the attention and help of both local and national authorities.

She urged the participants to strive together to put into gainful use that which had been learned in the meeting; to be able to report to one another with pride as to their respective accomplishments toward this end.

She noted the enthusiasm expressed by members of the group in maintaining contact and continuing the work of the seminar. She vowed to make this a reality.

On behalf of the group, she expressed gratitude to both ESCAP and INSTRAW for the opportunity to gather for this important seminar; she thanked the Royal Thai Government for its hospitality, the Provincial Waterworks Authority for the field trip and she thanked the resource people. Finally, she expressed her deep admiration and appreciation to the participants for their hard work and co-operation.

Mr. S. H. Rizvi of Pakistan then proposed on behalf of the participants a vote of thanks to the Chairperson. He expressed the gratitude of the participants for the Chairperson's patience and help during the proceedings of the seminar. He thanked also the Vice-Chairpersons and the Rapporteur.

He noted that the seminar had been not only innovative but useful as well, shedding light on the issue of women, water supply and sanitation. He thanked the resource people for their presentations and the Royal Thai Government for its hospitality.

The representative of INSTRAW, Ms. Stephani Scheer, then expressed the hope that the group had derived at least part of the intended benefit of the activity - to train trainers - and that the participants would now consider conducting national seminars, using the modules. She stressed INSTRAW's interest in following up on the results of the regional seminar and ensuring a multiplier effect. She suggested also that two or more countries represented might wish to hold joint meetings on a sub-regional basis.

She noted that as soon as the report was published in final form, each participant would receive a copy. However, there was no need to wait to begin implementing the recommendations contained in the report.

Ms. Scheer thanked ESCAP for providing the forum for this meeting, the Natural Resources Division for organizing it, the resource people for their presentations, the officers for their skillful guiding of the meeting and the secretariat and support staff for their invaluable technical assistance. Finally, on behalf of INSTRAW she expressed deep gratitude to the participants and the hope that she might work with them again.

In his closing remarks, Mr. A. F. Hoque, Economic Affairs Officer of ESCAP noted that the success of the seminar would be judged not only on the basis of what had been learned during this seminar but more so, on the basis of how many similar training seminars each of the participants could organize in their respective organizations, communities and countries. He further noted that success would also be judged by the extent and number of women the participants could motivate to actively participate in water supply and sanitation activities in their countries. He assured the seminar participants that if requested ESCAP and INSTRAW would help co-ordinate and organize such programmes subject to availability of external financial resources for these specific purposes.

Finally, Mr. Hoque expressed his thanks and gratitude to the officers of the seminar, particularly the Chairperson for her contribution and for guiding the seminar proceedings to a smooth and successful completion. He also thanked the representative of INSTRAW, and the participants for their co-operation and diligence during the course of the seminar.

Mr. Zhang Hai Lun, Chief of the Natural Resources Division, said that he was glad to see the seminar completed so successfully. Water supply and sanitation were such serious problems that it was gratifying to see serious commitment. He was pleased at the level of participation by women in the seminar and expressed satisfaction for the inter-agency co-operation between ESCAP and INSTRAW; he looked forward to continued co-operation in the future.

The Deputy Executive Secretary of ESCAP, Mr. Koji Nakagawa, then officially closed the seminar. He said that he was very pleased to have the opportunity to be with the participants for the closing session of the Regional Training Seminar on Women's Contribution to the International Drinking Water Supply and Sanitation Decade. He had followed the deliberations with keen interest and had had an opportunity to review the draft report of the seminar which contained a number of very pertinent recommendations. Some of the recommendations were particularly worthy of note. For example, the recommendation that women could contribute to the conservation of water resources through afforestation and reforestation, and motivating society to conserve trees and forests was, he felt, a particularly important one. There had been in recent months a spate of natural disasters, including devastating floods in some countries of the region, which were largely a result of deforestation and soil erosion. He had also noted the recommendation that since women were the main users of water in households, they should attempt to form water users' committees and motivate efforts through films, slides and other audio-visual media in order to prevent contamination and promote an awareness of the benefits of clean water and health. The recommendation that proper co-ordination by women's social and welfare organizations in projects was also particularly important. He noted that the evaluation of each of the five training

modules in terms of their relevance and effectiveness of presentation would be of considerable value in organizing similar activities in the future.

Mr. Nakagawa stressed the fact that the success of this seminar would be judged by the extent to which the participants were able to transfer the knowledge they had gained to those in the field who had not had an opportunity to be present in the seminar.

He expressed his sincere appreciation to the Royal Thai Government, especially the Provincial Waterworks Authority for having organized a field trip for the seminar participants to witness some of the relevant water work operations in Thailand specifically managed by women.

He also thanked the representatives from various United Nations and other organizations for their participation and contribution to the seminar. Special thanks were given to INSTRAW and its representative for collaborating with ESCAP in this activity. He hoped this would lead to more collaborative efforts in the future by the two organizations.

In closing, he congratulated the Chairperson and other officers for ably guiding the seminar to a successful conclusion and wished the participants a safe journey home.



## II. SUBSTANTIVE ISSUES

A. Module I: Introduction to the International Drinking Water Supply and Sanitation Decade and the International Research and Training Institute for the Advancement of Women

Module I, Introduction to the International Drinking Water Supply and Sanitation Decade (IDWSSD) and the International Research and Training Institute for the Advancement of Women (INSTRAW) was opened with a video tape on INSTRAW prepared by the United Nations Department of Public Information. Ms. Stephani Scheer, INSTRAW Consultant, then went on to speak about the Institute.

She noted that INSTRAW was a small but vital organization within the United Nations system. It was mandated to carry out research, training, information and communication activities worldwide to ensure that women were mobilized as key agents in the development process.

The Institute served as a catalyst and was meant to work in conjunction with other United Nations agencies and organizations, governments, inter-governmental organizations, bilateral agencies and non-governmental organizations.

Since its inception, INSTRAW had worked to improve methodologies for training. The Institute remained firmly committed to innovative approaches to training, recognizing the urgent need for a shift from didactic instruction to more participatory methodologies, involving communication and media support as essential ingredients.

Training for the advancement of women, she said, offered the challenge to break new ground, to look at the design of training programmes in a manner which would make them more attractive to participants. Local trainers should be retrained in the use of different approaches and methodologies. Participatory training in the broadest sense should teach the trainees how to avoid the trap of immobility. This meant that women should learn how to perceive their future development within the context of national development and to adapt to change accordingly.

She stressed that this could take place if problem solving analysis and dialogue were an integral part of the training process. It meant that participants themselves should play an active part in identifying needs, problems and approaches for their solution. These learner-centered methods treated the trainer only as a facilitator who should secure productive response and interaction among trainees. The inclusion of case studies and the use of popularly accepted forms of media such as films,

video, sound-slides and music, would improve the motivation in training.

With this frame of reference, she said, INSTRAW had entered into the IDWSSD.

Funded by the Government of Italy and in collaboration with the International Labour Organisation's International Centre for Advanced Technical and Vocational Training, the Institute had developed the multimedia training package, "Women, Water Supply and Sanitation", which formed the basis of this seminar.

The package synthesized five years of research by INSTRAW, including a survey of material, projects and activities undertaken by other United Nations agencies and bodies, IGOs, bilaterals and NGOs. Using a modular approach, the package aimed at two major target groups: national development officials and women's organizations.

The modular design of the package followed INSTRAW's training policy to develop innovative methodologies for women-in-development efforts and reflected INSTRAW's recognition of the need for a shift from formal training to more practical approaches. The type of training in this package, she said, was designed to strike a balance between structured learning and guided yet independent discovery, combined with acquisition of skills.

Ms. Scheer explained that the modules could be used in several ways: as part of a self-contained training course for either governmental or non-governmental audiences; or inserted into other types of training courses, such as management development, and briefing seminars for programme officers and consultants in water supply and sanitation.

The package had been field-tested last year in the form of a series of four national training seminars. These seminars were held in Ethiopia, Kenya, Somalia and Sudan. Each was organized in conjunction with a United Nations agency or organization represented in that country and with a government counterpart from a relevant ministry. National experts and lecturers were used to present the material and lead the work of the seminar.

Following this exercise, an evaluation was conducted and the modules were found to be viable, flexible and widely applicable.

In distributing the training package, INSTRAW sought to strengthen the institutional capacity of developing countries in water supply and sanitation in such a way that a multiplier effect was guaranteed.

In closing, Ms. Scheer stressed that the main thrust of this seminar was to create awareness of the necessity to enhance women's

involvement at all levels and stages of water supply and sanitation programmes, in order to make their contribution to those programmes more effective, easier and more productive.

She then introduced Ms. Marcia Brewster of the United Nations Department of Technical Cooperation for Development (DTCD), who continued the presentation of Module I.

After receiving her Master of Science in Development Economics from Georgetown University in Washington, D.C., Ms. Brewster came to work at the Central Bank of Thailand in 1970. She remained in Thailand for more than 10 years, working with the Thai government on a number of projects and with ESCAP in the Agriculture and Natural Resources Divisions.

For the last eight years she had been working in the Water Resources Branch of DTCD at United Nations Headquarters and represented DTCD on the Steering Committee for the Decade and the Interagency Task Force for Women and the IDWSSD.

Ms. Brewster began by saying that the concept of an International Drinking Water Supply and Sanitation Decade had first been articulated at the United Nations Water Conference, held at Mar del Plata, Argentina in March 1977. The delegates felt that access to clean water and sanitation should be a basic human right and that half of humanity should not be subjected to the drudgery of carrying water for hours and the scourge of water-related diseases. Therefore, a special one-day session of the General Assembly launched the IDWSSD on 10 November 1980.

#### Steering Committee for Co-operative Action for the IDWSSD

The United Nations system responded by creating the Steering Committee for Co-operative Action for the IDWSSD through an exchange of letters between the Executive Heads of the United Nations Development Programme (UNDP) and the World Health Organization (WHO) in 1980. At first, seven United Nations agencies became members of the Steering Committee; the Committee currently consisted of 11 member agencies, co-ordinating Decade policies at the international level. At the national level, the UNDP Resident Representative acted as the focal point for co-ordinating Decade-related activities.

The ultimate goal for the Decade had originally been access to clean drinking water and sanitation facilities for all by 1990. The emphasis was on coverage, national targets, national plans and relatively expensive hardware solutions. The World Bank estimated costs for reaching all people at US\$600 billion over the course of the Decade. Each country set targets and different Decades were launched in each country. It was expected that the major financing for projects would come from the countries themselves.

Unfortunately, such lofty goals were unrealistic in the face of the economic realities of the 1980s. The world-wide recession during the first half of the Decade, crippling external debt facing the Latin American, African and a number of Asian countries, and much lower levels of assistance provided by external support agencies (ESAs) left most countries far short of their goals. Other problems included the "hardware bias", with many of the ESAs providing only technology, and the lack of institutional arrangements for management and follow-up.

#### Evolution of approaches to Decade activities

During the course of the Decade some very important lessons were learned as a result of the inability to achieve coverage goals. Not only was money lacking, but systems installed were often not functioning properly. Emphasis shifted from coverage to sustainable development, and from initiation of projects to responsibility for effective use of water systems. The lessons learned evolved into the following types of Decade approaches.

1. Appropriate technology. The UNDP/World Bank handpumps project and an emphasis on "Village Level Operation and Management of Maintenance" (VLOM) provided a more realistic and lower-cost basis for extending coverage to larger numbers of people. World Bank cost estimates were reduced to US\$150 billion over the course of the Decade based on low-cost solutions.

2. Community organization and management. The focus was on commitment of the community to the new facilities, sense of responsibility and sense of ownership. It was found that involving women in the management of water facilities was an entry point for women in other development activities, and in many cases a means for generating income.

3. Operation and maintenance. The emphasis was on practical on-site training techniques and training of women in operation and maintenance. It had been found useful to involve women as extension agents/trainers, care-takers and water committee treasurers.

4. Innovative approaches to cost recovery. Among the approaches advocated for mobilizing funds to support operation and maintenance of facilities were: establishment of microenterprises related to water; seed money and revolving funds; encouragement of private enterprise; cross subsidies; and water pricing.

5. Complementarity of water supply and sanitation. The incidence of water-borne disease would not be decreased until sanitation and health education became integral parts of any water supply programme. The sanitation part of the IDWSSD had to be improved during the coming Decade.

6. Monitoring, research and evaluation. WHO's Minimum Evaluation Procedure (MEP) could be used to establish the impact of the project on women and women's impact on the project.

7. Developing human resources. This included not only on-the-job training, but also training at a higher level so that women could take an increasing responsibility for planning and decision-making with regard to water resources and sanitation activities.

8. Interagency collaboration. The IDWSSD was one of the best examples of interagency collaboration in the United Nations system. Agency operations were co-ordinated at the national level using the UNDP Resident Representative as a focal point for the Decade. In order not to lose the momentum of the Decade, a "Framework for Collaborative Action" was established at the Hague in November 1988, which would serve as the basis for follow-up to the Decade. The Collaborative Council would include any ESA in the water supply and sanitation field that wanted to participate, including United Nations agencies, bilateral donor organizations, development banks and non-governmental organizations. Collaboration would be carried out mainly at the national level, using the UNDP Resident Representatives as focal points.

#### Task Force on Women and the IDWSSD

The Task Force was initiated by UNICEF and INSTRAW, and established by the Steering Committee, in 1982. Strategies for involving women were identified at the planning stage, in the design and choice of technology and in implementation of water supply and sanitation projects. These strategies were field tested by the UNDP project PROWESS (Promotion of the Role of Women in Water and Environmental Sanitation Services). The Manager of PROWESS was now President of the Task Force and lessons learned from small-scale PROWESS field projects were often used as the basis for Task Force recommendations. Priorities for the Task Force were to make sure that the following were included as an integral part of any water supply and sanitation project: sufficient staff, time and financial resources for community participation; specialists in community development/participation early in the preparation phase of the project; and the acceptance of community responsibility for the project.

#### Role of the Department of Technical Co-operation for Development (DTCD)

Ms. Brewster noted that DTCD was the operational arm of the United Nations secretariat, with approximately US\$26 million per year worth of water resources field projects, of which about US\$9 billion were in the ESCAP region. DTCD was known primarily for its work in ground water exploration and development, river basin planning, water master plans (including data banks), and related training of engineers and technicians. Specific attention to women in water resources development

had been limited, but the recognition that community involvement was essential to the proper functioning of facilities had been accepted. Posts for rural sociologists had been included in some of DICD's Sahelian projects, most notably in Chad. In November 1988, DICD organized an Interregional Seminar on Women's Role in the Water Resources Sector, in Bamako, Mali for French-speaking countries, mainly in Africa. Among the major concerns expressed by participants were that: there was an excessive number of <sup>water resources</sup> dry wells dotting rural areas of Africa; and that strategies were needed for developing small-scale enterprises related to water which could offer promise to raise incomes. The women noted that their role should not only be confined to volunteer labour and attending women's meetings, but that they should be at the centre of decision-making and planning for water resources development.

### Beyond the Decade

As we moved beyond the IDWSSD, Ms. Brewster said, it was expected that the new Framework for Collaborative Action would provide greater co-ordination among all donors, leading to less wastage and overlap, as well as less "tied" aid. It was hoped that the decade of the 1990s would be one in which sustainability and efficient use of scarce water, human and financial resources would be stressed. The high rate of failure of water resources projects during the early years of the 1980s had to be reduced through the concerned involvement of women as the main managers and users of water resources and sanitation facilities.

In the discussion that followed presentation of Module I, a number of representatives noted the situation regarding water supply and sanitation in their countries. In Thailand, for the upcoming Decade Consultative Meeting a study had been conducted and surprisingly, while greater urban coverage had been expected, it was very much lower than the increase in rural supply. This was perhaps because of rural to urban migration and because of the greater focus on urban development.

In the Philippines, the formation of water districts (water supply systems at local level) was on an option basis. This was so because the development of the water system depended on a loan which had to be paid through the collection of the appropriate tariff, sufficient to cover all expenses including debt servicing.

The participants also discussed the issue of paying for service and it was noted that while in some cases water was appreciated more when it was paid for, in other cases, cost was prohibitive even where there was willingness to pay.

In Burma, the representative said the main problem was in maintenance and that recently arrangements had been made to train women in handpump repair.

The relationship between water supply and sanitation was discussed and it was observed that often there was not enough emphasis on sanitation.

B. Module II: Participation of women in planning water supply and sanitation projects

Module II, participation of women in planning water supply and sanitation projects was presented by Ms. Chaiskran Hiranpruk, Assistant Professor in the Faculty of Humanities at Kasetsart University, Bangkok, Thailand. Ms. Hiranpruk was also the ESCAP Representative to the International Pan Pacific and Southeast Asian Women's Association, Consultant and Project Manager in a UNFPA sponsored project, "Improvement in Living Conditions of Rural Women through Education and Training Activities." She served as a trainer for science, technology, cross-cultural communication and women-in-development activities.

Ms. Hiranpruk began with an overview of significant issues related to the participation of women in planning water supply and sanitation projects. The issue was raised as to whether there was adequate supply of clean drinking water for people globally. The picture and scale of what had been going on in the past three decades were illustrated. It was noted that the scale of pollution and of environmental destruction today was not local, it was global.

Even though water supply was principally a local problem, it needed to be viewed globally. While work was being done to ensure that there was adequate water supply at the local level, water supply globally could not be contaminated or disrupted any further.

She then raised the issue of how to look at the problem.

These four interrelated components were to be taken into consideration in the process of planning.

INSTITUTIONS

THEORIES, VALUES,  
IDEAS, ETC.

TEHCNIQUES

ENVIRONMENT

In order to strengthen the approach and techniques already introduced in the training package, the resource person introduced another two techniques which would help ensure women's effective participation. The two techniques were as follows:

1. Rural rapid appraisal (RRA).

Methods of RRA techniques were:

- interaction and flexibility
- direct fieldwork by senior researchers
- triangulation
- taking time

Five methods could illustrate the potential to fit purposes and conditions:

- micro-household longitudinal panel studies
- semi-structured interviews
- group interviews
- key indicator surveys
- intermediate-level research

2. Framework for gender-based analysis.

This represented a new approach to development which



systematically included women.

- a) Women's dimension in project identification:
  - (i) assessing women's needs;
  - (ii) defining general project objectives;
  - (iii) identifying possible negative effects.
- b) Women's dimension in project objectives:
  - (i) project impact on women's activities;
  - (ii) project impact on women's access and control.
- c) Women's dimension in project implementation:
  - (i) personnel;
  - (ii) organizational structures;
  - (iii) operations and logistics;
  - (iv) finances;
  - (v) flexibility.
- d) Women's dimension in project evaluation:
  - (i) data requirements;
  - (ii) data collection and analysis.

Finally, she noted that conditions of appropriate technology should be taken into consideration in planning strategies:

- cheap enough to be accessible to virtually all in the community;
- suitable for small-scale household or community application;
- compatible with need for creativity.

In closing, she stressed that women should be seen and heard taking action at all levels and that at the international level the Inter-agency Task Force should be mobilized to enhance the contribution women can make in this field.

After presentation of Module II, a discussion followed during which a number of different planning techniques used in different countries of the region were indicated.

The representative of UNICEF also stressed the difference between projects and programmes and said that while it would be desirable to perform in-depth studies for each project, it was not always possible in view of human resources shortage - both in number and skills - and that agencies could usually determine whether or not programmes were on track by conducting periodic studies.

The participants then met in four working groups. Their reports follow.

Group 1: Planning - what can women do to help ensure that global water resources are not disrupted any further?

Chairperson: Ms. Hira Sharma  
Rapporteur : Ms. Nurkia Tambunan

After discussions and deliberations the following recommendations were made:

1. Planning - At various stages of the planning process qualified, suitable women personnel should be associated.

2. Project formulation - At the stage of project formulation, qualified women should be put in charge so that better assessment of socio-economic conditions could be made.

3. Execution - Since water for domestic needs was arranged by women, implementation of the project should be supervised by their representatives in order to execute the project on need-based criteria.

4. Maintenance of project - The implementation of the project, even when done successfully, would fail if the facility was not maintained keeping in mind the requirements. Since women were the end beneficiaries, they were better able to assess supply hours, and the quantity of water required. Suitably qualified women should be put in charge of systems so that economical and efficient running of the project could be possible.

The group also felt that once the system was operational, the beneficiary community needed motivation to conserve the source by checking waste and pollution of water. Here women could contribute by participating and educating the community. To further help in economical utilization of resources, waste water might be used in gardening, etc. In conservation of natural resources of water, women could contribute by

organizing planting (afforestation and reafforestation) and motivating society to conserve trees and forests.

Group 2: Planning - what can women do to help ensure global water supply is not contaminated any further?

Chairperson: Ms. Nitaya Mahabhol

Rapporteur : Ms. Guo Yao

The group discussed the issue at length and then made the following recommendations:

1. Encouraging the role of women in water supply and sanitation planning and management should be emphasized.
2. Women should have the opportunity to improve their skills, knowledge and confidence to perform these activities.
3. Immediate action should be taken to establish a water quality surveillance system using a force of women.
4. Institutional development and strengthening, should be undertaken including co-ordination, women's participation, health education and information systems.
5. Since women were the main users of water, in households and communities, they should form water users' committees and motivate others by film, slides and other audio-visual media to prevent contamination, and to use clean water and be aware of water quality and its relation to health.
6. Information systems at all levels should include and target women.

Group 3: Planning - what can women do nationally to ensure that they get fresh and clean water into the home?

Chairperson: Ms. Kanlaya Reuksuppasompon

Rapporteur : Ms. Josefina N. Ruiz

The group first discussed the following issues:

- availability vs. "fresh and clean";
- urban vs. rural;

- what organizations were involved at present;
- what was the present method of financing.

They reached the following conclusions:

- there was a necessity for creating "awareness" at the national level on the importance of fresh and clean water with emphasis on its benefits to children;
- there was a necessity for involving and co-ordinating women's social welfare organizations in projects;
- there was a necessity for co-ordination and planning financing schemes for rural water supply and sanitation projects.

As supply of fresh and clean water was deemed essential for national health, growth and development, to achieve the objective of safe and adequate supply at the national level, the group made the following recommendations:

1. Steps should be taken at the national level to create awareness of the effects and benefits.
2. Women's social and welfare organizations should be involved with proper co-ordination of their activities by a key women's organization.
3. To complement these steps, an organization should be mandated by the government to look after financial aspects of suitable schemes for this purpose. This organization should have effective women's participation.

Group 4: Planning - what can women do locally to ensure that they get fresh and clean water into the home?

Chairperson: Ms. Daw Than Than  
Rapporteur : Ms. K. Padmaja

The group first discussed the following issues:

1. introduction - sources of water:
  - surface water,
  - ground water,
  - underground water;

2. selection of source of water: done locally;

3. types of contamination of water:

- biological,
- chemical,
- physical,
- unhygienic conditions.

They then made the following recommendations:

1. Formation of a women's organization - local women should be trained. Awareness should be created among women on the harmful effects of contaminated water.

2. Education of other local women to prevent contamination.

3. Treatment of contaminated water.

4. Local technology for easy treatment:

- boiling,
- using clean containers,
- sedimentation,
- filtration,
- addition of chemicals - bleaching powder, alum, etc.

C. Module III: Involvement of women in choice of technology and implementation of water supply and sanitation projects

Module III, involvement of women in choice of technology and implementation of water supply and sanitation projects was presented by Mr. M. A. Aziz, an Associate Professor of the Department of Civil Engineering, National University of Singapore. His major fields of expertise included water supply, human excreta disposal and wastewater treatment, solid and hazardous waste management, environmental pollution control and sanitation. He had been actively involved in education, training, research, consultancy and advisory services in various fields of water supply and sanitary engineering in this region.

In his presentation, Mr. Aziz gave an overview of the importance of water supply and sanitation in maintaining sound public health and better environment. He mentioned various reasons for the failure and non-sustainability of past water supply and sanitary projects in many developing countries. He highlighted the importance of women's participation in water supply and sanitation projects with special reference to the choice of technology and implementation of such projects.

Failure and/or non-sustainability of water supply and sanitation projects at different levels was easily identifiable. At country level these included: shortage of trained manpower; poor or lack of maintenance; shortage of finance; little relationship between water supply, sanitation, public health and other sectoral developments. At the operational stage national strategies and programmes were constrained by policies, institutional and technical inadequacies, among which the salient factors were undue priority given to urban and the most vocal groups; over-reliance on central management for community water supply and sanitation systems; insufficient involvement of community level technicians, artisans, workers and women; and use of inappropriate technology which was too complicated or difficult to operate and/or to maintain.

Not involving women, or understanding their important roles as the primary users and managers of domestic water supply and sanitation as well as guardians of their environment had caused much failure in development projects. Not enough attention had been given to women as primary human resources and the ultimate users of water; women were excluded from planning and implementation. Women were not consulted in designing technologies and often women were ignored when community involvement was sought.

Women, however, had emerged as key participants/resources in the use and management of household water supply and sanitation for IDWSSD. This emergence had not just happened. It had taken promotion and support from many people and agencies, stimulated by the efforts of the Interagency Task Force on Women and the IDWSSD, and UNDP projects. Government agencies and private efforts were needed to keep this going.

There was a need to understand women's traditional roles related to daily patterns of water usage and waste disposal. But from the local level, it was clearly understood that women were the grass-root leaders in housing and home management, food and agriculture, nutrition, irrigation and drainage, income generation and/or productivity, primary health care, pre-school child development/training, education and communication, and technological change/development. Women were therefore the focal point for change and for delivery of basic services with water as the primary resource and sanitation as a health index.

Women's participation he felt should be encouraged at an early stage throughout the project and the technology must be specially selected for the conditions under which it must function. Technology should be suitable for community operation and management. If more simple, cost-effective and reliable, as well as easy to operate and maintain, technology could be more easily incorporated. Where technology was easily understood by the community, people, especially women, would be more interested in finding more resources necessary to construct, operate and maintain water supply and sanitation facilities.

Technology must be appropriate. The aim was not only to reduce costs; the installation should be simple to operate and maintain using and building on existing knowledge in rural and small urban areas. Technology should be chosen that was affordable and did not rely greatly on foreign exchange; and it should encourage local employment and allow for continuous improvement with a view to further development. Appropriate technology was not a "second best"; it was a way of keeping pace with development. Water supply and sanitation technology should fit in with development in other sectors. This was the only way to encourage local development and to ensure that technological change was accepted as part of the social fabric. Appropriate technology was also deemed more socially relevant when sufficiently in advance of traditional technology to increase social benefits but not so advanced that it could not be understood and its tools repaired, maintained and adapted. The common failure to operate and maintain water supply and sanitation installations was due to earlier neglect of this factor; techniques alien to people's culture and level of development were imposed on their society and communities. Another approach, using more sophisticated technology with central agency staff, had failed in so many countries that a complete change was necessary.

The choice of a particular technology for water supply depended upon the nature of the source - groundwater, surface water or rainwater. Water was a high priority for women and as water drawers, they could provide much useful information on the siting and design of the facility. Similarly, the choice of sanitation technology depended on the nature of wastes, community needs, traditional and cultural backgrounds. Other factors which threw light upon the important role women had to play in selecting technology included climatic and site conditions, social-cultural-religious factors and institutional framework. The basic and most important aspects in guiding the selection and design of technology were sociological, cultural, cost-effectiveness, organization and management, environmental considerations and engineering. The technology should be acceptable and affordable by the community and it must work.

Mr. Aziz stressed that technology choice was an important part of the planning process and those who would be using the technology, especially the women, should be involved fully in the planning stage prior to donor identification - not after. Women should also be involved in decision-making on the design of additional sanitation facilities like washing places, drainage systems and other facilities. Consulting women on the design of tubewells and latrines could often result in simple technological changes which made tubewells and latrines more acceptable to users.

In the implementation of water supply and sanitation projects, women could participate as designers, construction workers and supervisors.

Operation and maintenance of water supply and sanitation facilities were deemed important tasks. Women's personal interest and their regular visits to such facilities made them more suitable to operate, maintain and repair such facilities.

Both men and women should be involved at all stages - from planning, choice and design of technology, implementation, operation, repair and maintenance. Women possessing technical capability as men - should be involved in both short-term and long-term planning of water supply and sanitation schemes.

Training of women was considered highly essential in order to understand various planning, design, construction, operation and maintenance aspects of water supply and sanitation projects. This training could be imparted through formal, informal and on-the-job training programmes. To impart effective training, qualified and experienced trainers (both men and women), proper training aids and institutions were essential.

Mr. Aziz concluded by saying that water supply and sanitation projects should be integrated to maximize their benefits and also should be integrated with other sectoral development for food, energy, housing, industry and transportation. This new approach would involve not only commitment by governments and international agencies but also the people themselves at the community level, especially women, who were the main beneficiaries. Each project must begin with the women, involve the women at all stages and belong to the women.

Following the presentation of Module III, different types of technology were discussed within the context of different national conditions.

The issue of excreta disposal was discussed and the difficulty of finding people willing to collect excreta for disposal.

The representative of UNEP said that appropriate technology had been in use in this region for a long time, but that it had been lost because of modernization. She also stressed the difficulties in water management that arose when rural dwellers had very fixed ideas - it was very difficult to change attitudes and introduce new systems.

Following the discussion, the participants organized themselves into four working groups to investigate further specific issues.



Group 1: Identify areas of involvement of women in choice and transfer of technology in water supply and sanitation projects.

Chairperson: Ms. Nitaya Mahabhol  
Rapporteur : Ms. Outhaki Khamphoui

The group discussed the issue and divided it into national and community levels.

At the community level, the areas they identified were: site, equipment, survey (urban and rural), purification, operation and maintenance, cost recovery and evaluation.

At the national level, they felt women could be involved in decision-making, lectures (academics), training (women's groups), financing.

They recommended:

1. improved health education through training:
  - (a) formal -
    - (i) manual preparation,
    - (ii) trainers,
    - (iii) curriculum,
    - (iv) media;
  - (b) informal -
    - (i) mass media,
    - (ii) exhibitions,
    - (iii) mass communication;
2. using models, e.g., TCDV (technical co-operation among developing villages) to promote self-sufficiency;
3. developing suitable means of communication.

Group 2: Identify ways and means to involve women in implementation of water supply and sanitation projects.

Chairperson: Mr. Colin E. R. Glennie  
Rapporteur : Ms. Hamidah Hj. Mohd. Nasir

After brainstorming, and representatives giving some illustrations of their country's practices, the group decided to concentrate on the national level. At the international level, it was agreed that women's

involvement was very limited. In so doing, in order to involve women in implementation of water supply and sanitation projects the group came up with the following.

1. Women's organizations - In most of the countries in the region, women's organizations did exist. For countries where there was a woman's organization, the implementing agency should work together with the organization, especially during the planning stage. For example, the organization could provide base-line data, information on the condition of the surrounding area, availability of water sources, and the habits of the village people in that particular studied area. This data was deemed very important to the implementing agency.

For countries which did not have a women's organization, normally the government had set up some procedure for the implementation of water supply and sanitation projects. The already existing procedure should be adapted and modified to suit the surroundings and culture of that country. For example, the UNICEF representative pointed out that in Bangladesh the Government made the regulation that during application for water supply, the women also must fill in the application form.

2. Locally elected body - In some countries due to culture and tradition, normally the group was male dominated. Now, the group urged, the Government should provide or reserve some seats for women. These women would be the representatives for that community eventually.

3. Women leaders - Recently the number of women leaders in countries in the region was increasing. These leaders were either politicians at national level or just ordinary women leaders for women's groups at community level.

4. Manpower - The government should adopt a target for percentage of women managers and other field staff. For example, the field workers, nowadays were mostly male. By adapting the job description, women could be involved and often perform the job better. Women could get more co-operation and information from the women at the grass-root level.

5. Women - In the construction stage, women could also be involved either as paid labour or on a voluntary basis. These women were often willing to do the job on a voluntary basis for long term benefit. The women should also be involved in the installation, e.g., of hand pumps where the end users were the women. The women could then adjust or give proposals if the installation did not satisfy the women's needs.

In conclusion, the group agreed that women's organizations, women leaders, locally elected bodies and the government and other implementing agencies should work together in order to achieve the objective of the decade and to involve women in planning, design and implementation of water supply and sanitation.

Group 3: Identify ways to involve women in preventive maintenance and simple repairs of water supply and sanitation projects.

Chairperson: Mr. Jan A. Speets

Rapporteur : Ms. K. Sudha Devi

In the discussion of the group, they considered only rural water supply.

Indication of main activities:

- keeping the surroundings clean;
- education in the value and proper use of clean water and sanitation facilities;
- training of women to do simple repairs in water supply and sanitation;
- women should be able to report breakdowns to the concerned authority and request repairs, as required.

They then discussed how to achieve this.

Recommendations

1. The formation of groups - this required initiation and orientation by the executing agency.

2. The executing agency should have qualified personnel in socio-economic activities to motivate rural people.

3. Composition of the group was also important. It should consist of:

a) a representative of the executing agency who should periodically inspect rural water supply facilities and assist the group in solving problems if any;

b) at least 50 per cent of the group should be village women;

c) the headman of the village could be the chairman of the committee.

4. Resources - last, but not least, was the requirement of funds for a maintenance programme. Hence, small scale finance should be

identified and initiated with the help of an organization or village headman.

Group 4: Plan training programmes - in implementation, operation and maintenance - to enable women to carry out water and sanitation programmes on a long-term basis.

Chairperson: Ms. Daw Than Than

Rapporteur : Ms. Kanlaya Reuksuppasompon

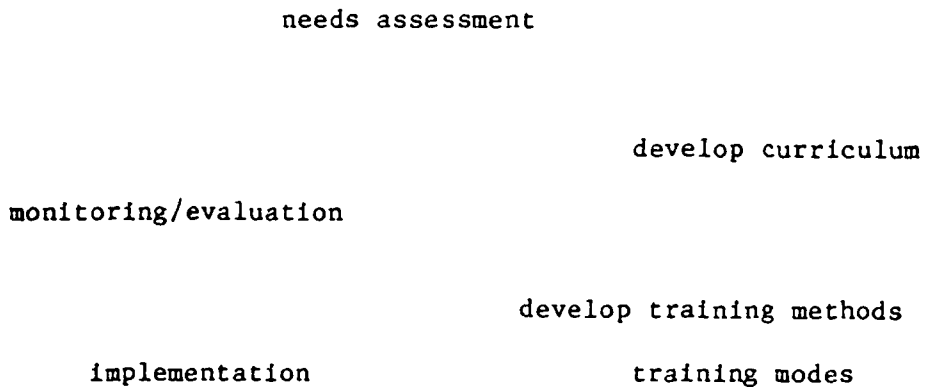
In discussing the issue, the group felt that in planning any training programme, one must take into consideration the following steps:

1. needs assessment
  - identify target group,
  - identify the group's specific needs,
  - find out information about the group's background, i.e., education, interest, socio-economics, etc.;
2. develop curriculum
  - state purposes/objectives,
  - define training activities (what should be included in the subject);
3. develop
  - a) training methods
    - formal,
    - informal,
    - in-service, etc.,
  - b) training modes
    - lecture,
    - discussion,
    - case-studies, practical training,
    - role-playing, field trip, etc.;

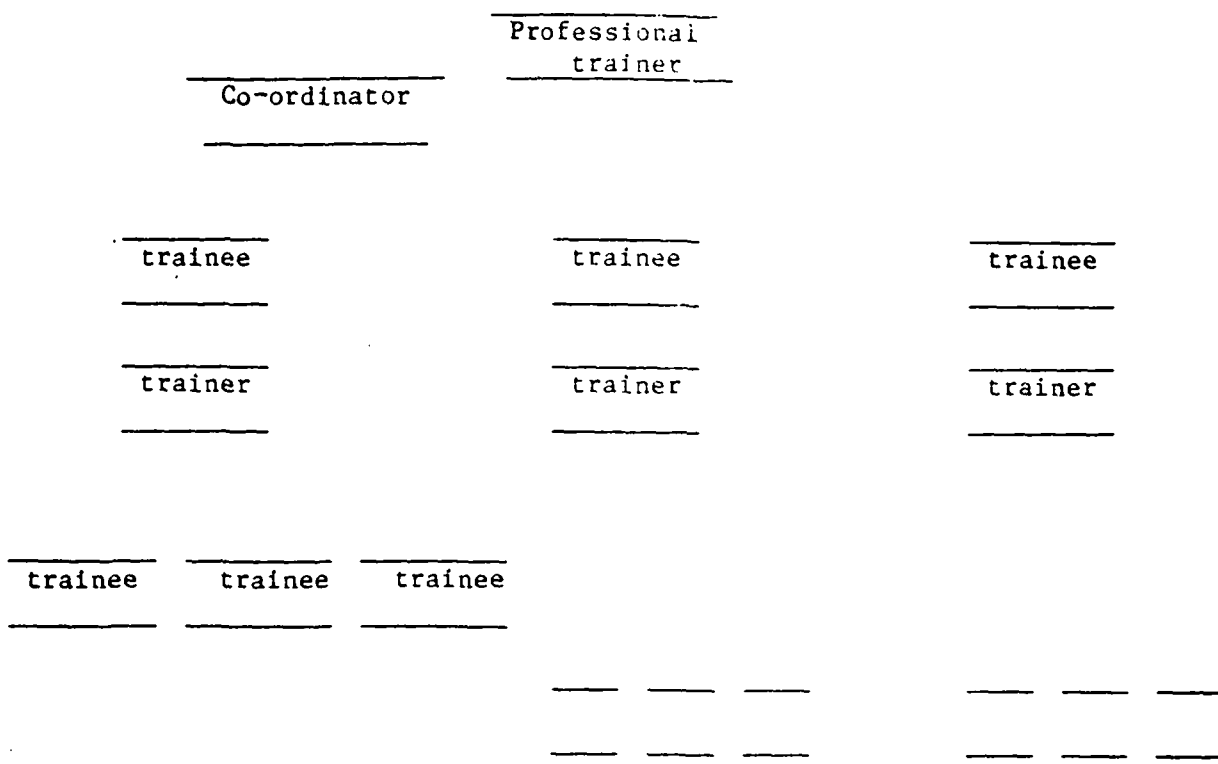
\* emphasis should be on adult learning/teaching
4. implementation
  - involve man-power/personnel and other resources, e.g., money, training aids, transportation, physical facilities;

5. monitoring/evaluation
- evaluate outcomes against the stated objectives,
  - use the results as an indicator to tell whether there is a need to improve the programme or not.

The above-mentioned steps were considered an on-going activity. It could also be explained by the flow-chart as shown:



To help maintain the programme, group 4 suggested that a training schedule be set (weekly, monthly, etc.), and training of trainers programme be used. This could be explained by the following chart.



A qualified/professional trainer with a good understanding of the needs of the group must be brought in to do the job. This trainer would train a group of trainees (should not exceed seven) in the technology, "know how", and also techniques of transferring knowledge. In the meantime, a training co-ordinator would act as facilitator. This person would be the link between the professional trainer and the trainees. After the completion of the programme, the trainees then become trainers and they in turn train a group of trainees according to the set schedule.

D.     Module IV:   The role of women in education and training activities for water supply and sanitation

Module IV, the role of women in education and training activities for water supply and sanitation, was presented by Mr. A. F. Hoque, Economic Affairs Officer in the Water Resources Section, Natural Resources Division of ESCAP. Mr. Hoque had been involved in the ESCAP subprogramme on regional water resources development and management for over five years. Before joining ESCAP in 1983, he worked with the Federal

Government of Canada for almost 10 years on various aspects of water resources and environmental engineering and management. Mr. Hoque also had wide ranging professional experience in the field of water supply and sanitation services from his previous association with various consulting engineering firms in Canada.

Mr. Hoque introduced the module by citing the following two quotations:

"Give me good mothers and I will give you a good nation"; and

"The hand that rocks the cradle shapes the world."

Mr. Hoque elaborated by noting that these historical sayings emphasized the crucial roles that women played as mothers, sisters and wives in molding characters, in forming hygiene habits, values and thus perhaps the nature of society. He emphasized the influence of women as mothers on children during their formative stages.

He then suggested that in view of these important roles women played in shaping lives and social characteristics, society had to pay greater attention in preparing them, through appropriate education and training, so that they could play their role properly and adequately.

He noted that in water supply and sanitation programmes, education and training of facility-users - community members - was always the weakest element, especially that of women. He cited shortage of funds, lack of education and training facilities and other logistical problems as the main reasons for this. He noted other problems such as socio-cultural and language problems, organizational problems, etc., contributing to this situation. He emphasized that despite these hurdles, the problem had to be tackled and suggested that education and training for facility-users, especially women, should be incorporated in all water supply and sanitation projects right from the planning stage.

During the presentation of the module, its broad and specific objectives were examined. The presentation concentrated on various aspects of training programmes for women. It was noted that there was a shortage of qualified women trainers in most developing countries of the region. To remedy the situation, well-planned and well-designed training programmes at the national level were needed. Training programmes should be based on assessment of requirements of women trainees and should be based on socio-cultural and other local needs of women. These requirements might be assessed on the basis of interviews with potential trainees. The methods, places, timing and other factors affecting interview situations were then examined and discussed.

Mr. Hoque introduced the pyramid concept of training propagation. It was noted that the diverging sides of the pyramid in this case should be open-ended with each successive horizontal side representing new people being trained until the grass-root level of the community was trained in the basics of health and hygiene, education, and, until all community members had received basic training in operation, use and care of water supply and sanitation facilities. He also emphasized the effect of multiplying factors, meaning each person trained in turn trained several others, and urged that it be fully utilized.

Selection criteria for women trainees, selection and composition of training materials, training situations, timing, venue, training methods and modes were discussed.

Scope and nature of training programmes were elaborated. Emphasis was laid on providing schools for basic education, technical training programmes, community-based training programmes and on-site and on-the-job training.

It was noted that training materials should be carefully selected, should be relevant, should be of interest and at the level of understanding of the participants, should be culturally suitable, well written, well presented, economically reproduceable and should be in local languages, if possible.

The roles of national, provincial and local governments in the field of promoting training and education for women were then discussed. It was noted that governments should not only set national policy for this purpose but also should help set up institutional facilities for implementing these policies and for implementing various education and training programmes in this sector. National and local governments should provide support for developing training programmes, training materials, advisory services, and for organizing training courses. Financial support for scholarships, fellowships, etc., for women's participation in education and training programmes should also be provided.

The scope of training women in various aspects of water supply and sanitation services was then discussed. It was noted that women could be trained as sanitarians, public health inspectors, health or sanitation aids, waterworks operators, managers and community development workers.

The importance of health and hygiene education was emphasized. It was noted that training in water supply and sanitation services should be linked with health education and other community development programmes such as education extension programmes, community development programmes, co-operative programmes, adult education programmes, etc.



Some of the constraints in training women in the field of water works were then discussed. Problems such as cultural and religious barriers, lack of childcare facilities, lack of transport, lack of regular working hours for housewives, etc., were mentioned. Some remedies for these constraints were suggested, such as using family settings, small group sessions, providing childcare facilities during the training course and using participatory approaches where trainers and trainees learned from each other. Finally the importance of incorporating health and hygiene education and proper use of waterworks facilities in the primary and elementary levels of formal education was emphasized.

Mr. Hoque concluded with a presentation of the videotape "Prescription for Health" prepared by the International Development Research Centre, Ottawa, Canada. This elaborated the link between water, wastewater, food, water-borne disease and health, and emphasized the effect of clean environment on the well-being of family and community.

After the presentation of Module IV, there was a general discussion on the points raised.

The participants discussed different methods of protecting sources and how to motivate people who would not adapt.

The representative from Burma noted that women could be trained in the area, even by their own children. Schools, beginning at the primary level, should initiate and train children in protecting water sources and in hygienic practices. They in turn can impart this information and knowledge in their homes - and to their mothers.

In discussing the role of women in education and training, both as trainers and trainees, the element of time was raised. During normal working hours of government or agencies, women were not necessarily available for training.

The representative of UNICEF cited a cash-for-training programme that was being conducted by a non-governmental organization in Bangladesh, as an example of one way to motivate women to make time for training. Women were invited to come for one day of training. They received a day's pay, a meal and care for their children during that day.

The participants then met in working groups to discuss key issues related to this training module.

Group 1: National programmes to involve women in education and training in the field of water supply and sanitation - what is being done, and what needs to be done at the national level?

Chairperson: Ms. Methee Larptavee  
Rapporteur : Ms. Daw Than Than

The group first discussed the present situation:

- no effective or well-organized national programme existed;
- at community level, voluntary and other organizations had some programmes for training in health, sanitation and nutrition;
- ministries of health had health programmes which included elements of training;
- in some countries, international aid agencies organized training programmes, but on a short-term basis.

They then made recommendations as to what needed to be done:

1. Training should be part of national planning.
2. National training institutions should include a component of training in water supply and sanitation.
3. Training programmes should be properly structured, which might include:
  - awareness of the importance of clean water and sanitation facilities;
  - basic methods of getting clean water, avoiding contamination;
  - simple repairs and maintenance;
  - importance of sanitation and methods to ensure cleanliness in the house and surroundings;
  - protection of forests to conserve water;
  - establishment of model villages.
4. Informal training should supplement formal training at the national level.

Group 2: What are the constraints to involving women in education and training programmes in water supply and sanitation? How can these constraints be overcome?

Chairperson: Ms. Hira Sharma  
Rapporteur : Ms. Tinny Suryani

In discussing the topic, the group first identified the following constraints:

1. Illiteracy - most people in rural settlements still lacked even basic literacy.
2. Social, economic, cultural - certain social, economic and cultural conditions prevented women from being involved in education and training.
3. Language - language barriers also existed between ethnic and minority groups.
4. Time - there was often little time left for training for women after their work at home or on the farm or homestead.
5. Geographical - geographical constraints existed because villages were separated by large distances.
6. Trainers - a shortage of trainers with technical capability or skill also existed.

They then made the following recommendations.

1. Education - adult education/training programmes should be developed to give orientation in social and cultural issues as well as aspects of hygiene.
2. Economic betterment - if women's economic situation were improved it would permit them more time for training and also give them greater freedom of choice.
3. Childcare - increased and improved childcare facilities would also allow women more time to participate in training courses.
4. Audio-visual - easily understandable methods of training should be developed emphasizing audio-visual media, including: exhibitions, slides, etc. They should also be easily accessible, e.g., mobile training.
5. Motivation - both men and women should be motivated to receive training.

Group 3: What is the role of women in motivating the community to improve sanitation and maintain a clean environment? Suggest ways in which this role could be made more effective.

Chairperson: Ms. Kusniati  
Rapporteur : Ms. K. Padmaja

In their discussion, the group identified the role of women as:

1. Wife/mother:
  - cook
  - nurse
  - maid
2. Educator/teacher:
  - school teacher
  - information disseminator
  - opinion leader
3. Office administrator:
  - manager
  - motivator
  - implementor
4. Social worker:
  - health and sanitary inspector
  - literacy promotor
  - co-ordinator

The group then recommended ways in which these roles could be made more effective:

1. Wife/mother:
  - a) cook
    - prepare and handle food carefully,
    - clean hands and sterilize vessels,
    - safely dispose of solid waste;
  - b) nurse
    - treat children affected by water-related/  
water-communicable diseases,

- safely dispose of faeces of infants;
- c) maid
  - wash clothes and utensils carefully,
  - clean the house and surrounding area,
  - keep toilets clean.

2. Educator/teacher:

- a) school teacher
  - prepare and present visual aids with a specific time each day;
- b) information disseminator
  - communicate the same to neighbours and friends, relatives, etc.;
- c) opinion leader
  - formulate opinions from the various (e.g., religious) groups.

3. Office administrator:

- a) manager
  - prepare a code of ethics for maintaining good sanitation among colleagues;
- b) motivator
  - motivate the employees to follow sanitary principles;
- c) implementor
  - strive to see that proper sanitary conditions are maintained.

4. Social worker:

- a) health/sanitary inspector
  - promote good sanitary conditions and check them,
  - check the outbreak of communicable disease,
  - distribute the required chemical and medicine in case of contamination or disease;
- b) literacy promoter
  - give adult education on sanitation;
- c) co-ordinator
  - co-ordinate sanitation activities in a locality between officials and others.

The group reached the following conclusions:

1. The women should know their functions very well as wife/mother, as educator/teacher, as administrator or social worker.
2. They should participate in improving sanitation and maintaining a clean environment.
3. The basic requirement is that women should be exposed to the importance of knowledge and know-how in sanitation, hygiene and health aspects.

This could be done at home first and then in the community to achieve the goals of the water supply and sanitation decade.

Group 4: What is the role of women both as trainers and trainees in health and hygiene education? How can this be enhanced?

Chairperson: Ms. Rahima Nahar  
Rapporteur : Ms. Dorji Choden

From this topic, the group identified two points:

1. Women had a unique role in setting the standard of health and hygiene for themselves, the family (especially children), and the community/surroundings.
2. Women as trainers understood women better and women as trainees paid more attention to women trainers.

In response to the question of how this could be enhanced, the group recommended the following:

1. The selection of women trainers was deemed critical. Trainers who were compatible with, and suitable to, the social and cultural background of the trainees should be selected.
2. Women trained should be given recognition (e.g., certificates, badges, plaques, etc.). This would encourage and create confidence in that role.
3. Transport and other necessary facilities should be provided.
4. Training materials should be attractive and effective in conveying the message (e.g., films, video, slide/sound shows, folk songs, plays, etc.).

5. Mass media and religious leaders should be mobilized and utilized.
6. Female primary school teachers should be given special training and teaching materials. This would lay the foundation for basic knowledge of health and hygiene in school children.
7. Flexible working hours should be given to field workers and allowances as necessary. During normal working hours, women were not usually available for training.
8. Women trained must be given support/supervision and periodic refresher training.
9. Women trained must be given specific measurable targets and when targets had been achieved, they should be rewarded.

E. Module V: Evaluation of water supply and sanitation projects

Module V, evaluation of water supply and sanitation projects was presented by Ms. Sunanta Buaseemuang, Director of the Water Quality Control Division, Provincial Waterworks Authority, Bangkok, Thailand.

Ms. Buaseemuang had been working for over 18 years in the field of water supply, both in rural and urban areas. She was involved in planning and administering the slow sand filter project, development of community participation and health education. She also had experience in management and evaluation of projects, and training water supply operators.

She started her presentation with a definition of the term, "project". It was a group of activities, she said, carried out to meet a specified objective and goal. Then she continued with the project cycle in which evaluation was a part of routine activities in the project management system.

The project cycle consisted of:

- identification
- preparation
- appraisal
- implementation
- operation and
- evaluation

Under each technical term mentioned above, she explained about activities that should take place including benefits that might be gained by the end of each period.

She emphasized the difference between words that were often found to be confusing:

- evaluation - this aimed primarily at providing feedback for planning and design;
- monitoring - this was a routine activity of the project management system;
- appraisal - this term referred to the assessment of the merit of design before the project was undertaken.

She then asked, why evaluate? What were the purposes? There were two main purposes to evaluating the project:

1. to provide feedback to planners as to whether the project had been a success or not;
2. to provide information to improve the planning of future projects. Information should not be just a list of problems, and then possible causes, but should also include recommendations.

WHO had developed guidelines, entitled, "Minimum Evaluation Procedure" (MEP) to evaluate the functioning and utilization and conclude with a discussion of impact study methodology. Evaluation of impact was only appropriate for a project known to be correctly functioning and well-utilized. These guidelines were written primarily for projects which employed simple technologies. They were less appropriate for large urban projects employing sophisticated technology.

Evaluation could take four approaches:

- technical evaluation
- administrative evaluation
- health impact evaluation
- village level evaluation.

It could be used as a tool for managers responsible for construction and/or operation and maintenance of water supply and sanitation. Such an evaluation could be defined in various ways, such as, by geographic area, technology, agency, socio-economic group.



MEP suggested step-by-step procedures for evaluation as follows:

- decision to evaluate
- selection of persons responsible for the evaluation
- establish terms of reference
- desk study
- field visit to plan the evaluation
- collection of data, to include information on
  - functioning of facilities
  - utilization of services
  - institutional and financial data
- assessment of data
- preparation of recommendations
- review of the report and
- follow-up action.

The question was then raised why involve women?

The participation of women in water supply and sanitation projects could have several benefits. It could contribute to the achievement of specific project objectives of functioning and use of facilities and also to the attainment of wider development goals. Further, their participation could also be of both direct and indirect benefit to the women themselves. So, evaluation of water supply and sanitation projects should assess women's involvement as an indicator of the success or failure of the facilities provided.

It also suggested that collection of data on the involvement of women in WSS projects was needed. The data should cover:

- what was the role of women in the village water committee, and the percentage in this group?
- were they being consulted on the choice of technology?
- were they being involved in construction?

- were they being given training in maintenance of water supply schemes?
- were they being trained as health educators?

Further, the degree of women's involvement in WSS projects should be evaluated in three stages as follows:

stage 1: operation - to evaluate the appropriateness to women and children as users, quality of installation, selection of site, technology and reliability of source;

stage 2: performance - to evaluate acceptance, use, maintenance, repair and involvement in community participation;

stage 3: impact - in general it was more complex to evaluate the impact, as it was costly. The translation of disease reduction into simple economic benefits was even more complex and required specialized research institutions rather than government agencies responsible for water and sanitation programmes. For the reasons mentioned above, therefore, MEP had not included the evaluation of impact.

She noted, however, that the idea was to evaluate the health and socio-economic benefits to women, and their administrative role:

1. Impact of water projects on women

- a) Did women use the time saved for income generating activities?
- b) Did women achieve health improvement?
- c) Did women participate in the construction? If so, did they receive any wages?
- d) Did they learn new skills?
- e) What changes occurred in daily life during the saved hours?

2. Women's impact on the project

This was to compare the functioning and utilization of a project with and without women's involvement.

In concluding, Ms. Buaseemuang gave a slide presentation on the use of MEP for water supply and sanitation.

A brief discussion followed presentation of Module V.

A representative of India raised the issue of extending the IDWSSD and expressed the belief that the time was right now for evaluating the achievements of the Decade as set in the originally articulated goals. This needed to be carried out before the Decade was extended so as to redefine the goals beyond 1990.

The representative of the Netherlands expressed the concern that implementing agencies were not always consulted and involved when an evaluation was being carried out. He stressed that not only the project in relation to the beneficiaries, but also the project in relation to the implementing agency should be evaluated.

The representative of INSTRAW noted that, at least on the part of the United Nations, efforts were being made in that direction and that components for outside evaluation were being included in the project formulation stage, so as to ensure budgetary resources when the time came. Outside evaluators were being used to ensure objectivity.

The representative of UNICEF pointed out that MEP should also try to evaluate the relevance of the project within the national context and to national goals. He cited an example where a project had achieved its goals and everyone had benefited, but the cost had been too high for it to be replicated on a national scale.

The participants formed three working groups. Their reports follow.

Group 1: The role of women in functioning of water supply and sanitation projects - how can this be evaluated?

Chairperson: Ms. K. Padmaja  
Rapporteur : Mr. S. H. Rizvi

The group discussed the issue and then made the following recommendations:

A. Water supply

1. Open well

- a) Carrier - clean bucket and rope,  
- right size of bucket;
- b) User - proper storage of water,

- removal of contamination,
- conservation of water,
- reuse of water;
- c) Manager - protection of source of supply,
- maintenance.

2. Bore well

- a) Carrier - vessels should be clean and uncontaminated;
- b) User - proper storage,
- conservation of water,
- reuse of water;
- c) Manager - maintenance of hand pumps,
- maintenance of spare parts.

3. Piped water supply

- a) Carrier) ) same as above;
- b) User )
- c) Manager - maintenance of taps and pipelines.

B. Sanitation

- 1. Rural - domestic waste disposal: for both liquid and solid waste disposal, use proper disposal methods for proper hygiene and clean environment.
- 2. Urban
  - a) domestic waste disposal
    - (i) liquid waste - drains,
    - (ii) solid waste - proper disposal methods;
  - b) municipal waste disposal

- (i) liquid waste - drains,
- (ii) solid waste - garbage collection and disposal.

Group 2: The role of women in utilization of water supply and sanitation projects - how can it be evaluated?

Chairperson: Ms. K. Sudha Devi  
Rapporteur : Mr. Jan A. Speets

In discussing the question, the group stressed that women were the main users of water and so noted the following recommendations:

1. Enough emphasis should be given to design and quality of standposts to ensure that they are durable.
2. The technical design of the standpost should be suitable in the sense that it is easily accessible and suits the existing practice.
3. Timing of water should suit the requirements and routine of the user.
4. Quality aspects such as colour, taste and smell should be acceptable. Educational awareness should be integrated into the project.
5. Quantity should be ensured.
6. Sanitary facilities should be properly located.
7. Health education programmes should form an integral part of the project.
8. Facilities should be properly maintained.

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Group 3: The impact of water supply and sanitation projects on women - how can this be evaluated?

Chairperson: Ms. Daw Than Than  
Rapporteur : Ms. Guo Yao

In discussing the topic, the group decided to concentrate on two parts: impact and evaluation.

A. Impact

1. health improvement

- a) personal health (mental and physical),
- b) increase of life span,
- c) family treatment (e.g., more time for childcare, nutrition, etc.);

2. social improvement

- a) more time for housework,
- b) improvement of living standard,
- c) motivators and educators in their communities,
- d) improvement of social status;

3. economic improvement

- a) more time for income-generating activities,
- b) more money being earned for health, education, nutrition of the family.

B. Evaluation - interview women with checklist and visual inspection

1. health

- a) water-borne and sanitation - related diseases,
- b) number of undernourished children in the family,
- c) education on infant mortality and maternal mortality;

2. social

- a) more participation or involvement in social activities,
- b) percentage of women represented in community organizations,
- c) participation in recreational activities or relaxation;

3. economic - income indicators.

ANNEX I

List of Participants

AFGHANISTAN

? Ms. Parwin, Pharmacist, Water Supply and Sanitation Department, Ministry of Public Health, Kabul

BANGLADESH

? Ms. Rahima Nahar, Research Officer, Local Government Division, Bangladesh Secretariat, Dhaka

BHUTAN

? Ms. Dorji Choden, Assistant Engineer, Public Works Department, Thimphu

BURMA

? Ms. Daw Than Than, Township Medical Officer, Primary Health Center, Ministry of Health, Rangoon

CHINA

? Ms. Guo Yao, Programme Officer, All-China Women's Federation, Beijing

INDIA

? Ms. K. Sudha Devi, Executive Engineer, Kerala Water Authority, Kerala

PO B.6519  
Vilas Shaver  
Trivandrum 695033  
Kerala.

? Ms. Manisha K. Mankad, Assistant Engineer, Gujarat

? Ms. K. Padmaja, Executive Engineer, Secunderabad

? Ms. Hira Sharma, Superintending Engineer, Lucknow

INDONESIA

? Ms. Kusniati, Directorate of Water Supply, Ministry of Public Works, Jakarta

? Ms. Tinny Suryani, Head of Sub-Division of United Nations and Other International Agencies, Ministry of Public Works, Jakarta

? Ms. Nurkia Tambunan, Directorate of Water Supply, Ministry of Public Works, Jakarta

LAO PEOPLE'S DEMOCRATIC REPUBLIC

- ✓ Ms. Outhaki Khamphoui, Chief, Public Health Service, Vientiane Municipality, Ministry of Health, Vientiane
- ✓ Ms. Douangta Somphanith, Water Specialist, Chief, Water Survey Section, Ministry of Transport, Communication and Construction, Vientiane

MALAYSIA

- ✓ Ms. Hamidah Hj. Mohd. Nasir, Senior Executive Engineer, Water Supply Branch, Public Works Department, Kuala Lumpur

NEPAL

- ✓ Ms. Nil Keshari Shakya, Acting Divisional Engineer, Department of Water Supply and Sewerage, Kathmandu

NETHERLANDS

- ✓ ~~NO~~ Mr. Jan A. Speets, Co-ordinator, Indo-Dutch Water Supply Program, Ministry for Development Co-operation, New Delhi

PAKISTAN

- ✓ Mr. S. H. Rizvi, Additional Secretary, Women's Division, Islamabad

PHILIPPINES

- ✓ Ms. Josefina N. Ruiz, Deputy Administrator, Administrative Services, Local Water Utilities Administration, Quezon City

SRI LANKA

- ✓ Ms. Joyce Miriam Denise Withana, Assistant General Manager (Designs), National Water Supply and Drainage Board, Ratmalana

THAILAND

- ✓ Ms. Theechat Boonyakamkul, Environmental Health Division, Health Department, Ministry of Public Health, Bangkok
- ✓ Ms. Wanapa Hongsamat, Community Development Technical Officer, Women and Child Development Division, Community Development Department, Ministry of Interior, Bangkok
- ✓ Ms. Methee Larptavee, Educational Supervisor in Home Economics, Supervisory Unit, Samsen Witthayalai, Bangkok



Ms. Nitaya Mahabhol, Director, Environmental Health Division, Department of Health, Ministry of Public Health, Bangkok

Ms. Kanlaya Reuksuppasompon, Training Officer, Provincial Waterworks Authority, Bangkok

ANNEX II

List of Observers/Other Participants

UNITED NATIONS

International Labour Organisation

X Ms. Klinkert, Assistant Expert on Women's Programmes, Bangkok

World Bank

Mr. K. M. Minnatullah, Project Officer, Dhaka

Mr. Sacha Sethaputra, National Project Officer, Bangkok

World Health Organization

Dr. U Han Tun, WHO Liaison Officer to ESCAP, Bangkok

International Research and Training Institute for the Advancement of Women

Ms. Stephani Scheer, Consultant, Santo Domingo

United Nations Centre for Human Settlements

Ms. Rita Pasqualini, Human Settlements Officer, Bangkok

United Nations Children's Fund

Mr. Colin E. R. Glennie, Co-ordinator, Water and Environmental Sanitation, Dhaka

United Nations Department of Technical Co-operation for Development

Ms. Marcia Brewster, Economic Affairs Officer, New York

United Nations Development Programme

Ms. Akiko Naito-Yuge, Assistant Regional Representative, Bangkok

Ms. Sirisupa Soonsin, Programme Officer, Bangkok

United Nations Economic and Social Commission for Asia and the Pacific

Mr. Koji Nakagawa, Deputy Executive Secretary, Bangkok

X Mr. Zhang Hai Lun, Chief, Natural Resources Division, Bangkok

Mr. A. F. Hoque, Economic Affairs Officer, Natural Resources Division, Bangkok

Ms. Samsiah A. Majid, Information Officer, Natural Resources Division, Bangkok

Ms. Meena Patel, Economic Affairs Officer, Social Development Division, Bangkok

Ms. Yumiko Tanaka, Economic Affairs Officer, Social Development Division, Bangkok

Mr. Khaled Khali, Chief, Information Service, Bangkok

United Nations Environment Programme

Mr. R. O. Deshpande, Environment Affairs Officer, Bangkok

• X Ms. Khunying Ambhorn Meesook, Senior Women's Advisory Committee for the Environment, Bangkok

OTHER ORGANIZATIONS

Asian Institute of Technology

Ms. Samorn Muttamara, Associate Professor, Division of Environmental Engineering, Bangkok

Interim Committee for Co-ordination of Investigations of the Lower Mekong Basin

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Chr. ← Mr. Wouter T. Lincklaen Arriens, Mekong Secretariat, Bangkok

Ms. K. I. Matics, Information Specialist, Bangkok

International Council on Social Welfare

Ms. Khunying Ambhorn Meesook, President, Bangkok

RESOURCE PERSONS

Mr. M. A. Aziz, Associate Professor, Department of Civil Engineering, National University of Singapore, Singapore

Ms. Marcia Brewster, Economic Affairs Officer, United Nations Department of Technical Cooperation for Development, New York

Ms. Sunanta Buaseemuang, Director, Water Quality Control Division,  
Provincial Waterworks Authority, Bangkok

Ms. Chaiskran Hiranpruk, Assistant Professor, Faculty of Humanities,  
Kasetsart University, Bangkok

Mr. A. F. Hoque, Economic Affairs Officer, Natural Resources Division,  
United Nations Economic and Social Commission for Asia and the Pacific,  
Bangkok

Ms. Stephani Scheer, Consultant, United Nations International Research and  
Training Institute for the Advancement of Women, Santo Domingo

ANNEX III

AGENDA

1. Opening of the seminar
2. Election of officers
3. Adoption of the agenda and programme of work
4. Module I: Introduction of the International Drinking Water Supply and Sanitation Decade and the United Nations International Research and Training Institute for the Advancement of Women
5. Module II: Participation of women in planning water supply and sanitation projects
6. Module III: Involvement of women in choice of technology and implementation of water supply and sanitation project
7. Module IV: Role of women in education and training activities for water supply and sanitation
8. Module V: Evaluation of water supply and sanitation projects
9. Adoption of the report
10. Closing of the seminar