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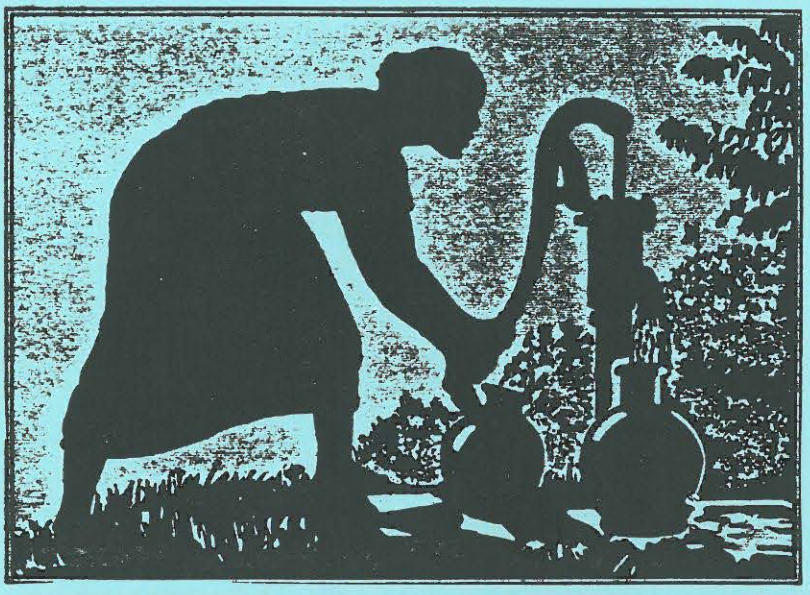
DEPARTMENT OF ECONOMIC AND SOCIAL DEVELOPMENT

INTERNATIONAL RESEARCH AND TRAINING INSTITUTE
FOR THE ADVANCEMENT OF WOMEN

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

WORKSHOP ON TRAINING MODULES FOR WOMEN, WATER SUPPLY AND SANITATION



Bangkok, Thailand
21-25 September 1992

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NOTES

The designations employed and the presentation of material in this report do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The monetary unit in Thailand is the baht (B). During the period of the Workshop, the value of the Baht in relation to the United States dollar was $US 1 = B 25.35 (September 1992).

Abbreviations used

ESCAP	- Economic and Social Commission for Asia and the Pacific
IDWSSD	- The International Drinking Water Supply and Sanitation Decade
INSTRAW	- United Nations International Research and Training Institute for the Advancement of Women
MEP	- Minimum Evaluation Procedure
PROWWESS	- Promotion of the Role of Women in Water Supply and Environmental Sanitation Services
SARAR	- Self-esteem Associative Strength Resourcefulness Action Planning Responsibility
UNCED	- United Nations Conference on Environment and Development
UNDESD	- United Nations Department of Economic and Social Development
WID	- Women in Development
WSS	- Water Supply and Sanitation

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ABSTRACT

The Workshop on Training Modules for Women, Water Supply and Sanitation was held at the Headquarters of the Economic and Social Commission for Asia and the Pacific, in Bangkok, Thailand, from 21-25 September 1992.

There were 22 participants from the following countries of the Asia and Pacific region: Bangladesh, China, India, Malaysia, Pakistan, the Philippines, and Thailand. The following United Nations system organizations were represented: United Nations Development Programme (UNDP); United Nations Children's Fund (UNICEF); World Health Organization (WHO); United Nations Women's Fund (UNIFEM); Food and Agriculture Organization (FAO).

The modular training package "Women, Water Supply and Sanitation" reflects the work of UNDESD, INSTRAW and the ILO/Turin Training Centre in this area. Its production was funded by the United Nations.

The modules aim at promoting the integration of women's needs with participation in sustainable water supply and sanitation programmes, paying particular attention to training activities and to the management of water resources.

The package is designed to give a general overview and should be adapted by trainers to the particular requirements and needs of a given country.

CONTENTS

		Page
I.	REPORT OF THE WORKSHOP.....	1
	A. Opening of the session.....	1
	B. Election of officers.....	1
	C. Adoption of the agenda.....	1
	D. Overview of training methodology and workshop procedures.....	1
	E. Technical session I: Presentation and discussion of training module I: The International Drinking Water Supply and Sanitation Decade (ISWSSD) and beyond.....	2
	F. Technical session II: Presentation and discussion of training module II: Participation of women in planning, choice of technology and implementation of women, water supply and sanitation projects.....	7
	G. Technical session III: Presentation and discussion of training module III: Role of women in hygiene education and training activities for water supply and sanitation.....	13
	H. Technical session IV: Presentation and discussion of training module IV: Participation of women in management of water resources, water supply and waste disposal.....	16
	I. Technical session V: Presentation and discussion of training module V: Evaluation and monitoring of water supply and sanitation programmes, projects, and the role of women	20
	J. Adoption of the report of the meeting and closing session.....	24

Page

II. EVALUATION OF THE EFFECTIVENESS AND USEFULNESS OF THE TRAINING MODULES FOR WOMEN, WATER SUPPLY AND SANITATION 26

A. Evaluation of individual modules 27

1. Module I. The International Drinking Water Supply and Sanitation Decade (IDWSSD) and beyond 27

2. Module II. Participation of women in planning, choice of technology and implementation of water supply and sanitation projects 28

3. Module III. Role of women in hygiene education and training activities for water supply and sanitation projects 30

4. Module IV. Participation of women in management of water resources, water supply and waste disposal 32

5. Module V. Evaluation and monitoring of water supply and sanitation programmes, projects and the role of women 33

B. Overall evaluation of training modules 34

Annexes

I. List of participants..... 39

II. Opening statements..... 44

A. Mr. Rafeeuddin Ahmed, Executive Secretary, Economic and Social Commission for Asia and the Pacific 44

B. Ms. Dunja Pastizzi-Ferencic, Director, Science, Technology, Energy, Environment and Natural Resources Division, and Chairperson Task Force on Women in Development, Department of Economic and Social Development 46

C. Ms. Margaret Shields, Director, United Nations International Research and Training Institute for the Advancement of Women 49

III. Agenda..... 52

I. REPORT OF THE WORKSHOP

1. The Workshop on the Training Modules on Women, Water Supply and Sanitation was held at the Headquarters of the Economic and Social Commission for Asia and the Pacific, in Bangkok, Thailand, from 21-25 September 1992.

2. The Workshop was organized by the United Nations Department of Economic and Social Development (DESD), in cooperation with the United Nations International Research and Training Institute for the Advancement of Women (INSTRAW) and the Economic and Social Commission for Asia and the Pacific (ESCAP).

3. Twenty-two participants attended the Workshop from the following developing countries: Bangladesh, the People's Republic of China, India, Malaysia, Pakistan, the Philippines and Thailand. The following United Nations organizations were represented: the United Nations Children's Fund (UNICEF); the United Nations Development Programme (UNDP); the World Health Organization (WHO); the United Nations Women's Fund (UNIFEM); and the Food and Agriculture Organization (FAO). (See Annex I).

A. Opening of the session

4. The Workshop was opened with statements conveyed on behalf of the Economic and Social Commission for Asia and the Pacific, the United Nations Department of Economic and Social Development, and the United Nations International Research and Training Institute for the Advancement of Women (see Annex II).

B. Election of officers

5. The following officers were elected for the Workshop:
Chairperson: Ms. Indrani Sen, Joint Secretary, Ministry of Urban Development, Government of India; Vice-Chairman: Mr. Abdul Hameed Naqshbandi, Joint Secretary, Ministry of Local Government and Rural Development, Government of Pakistan; Rapporteur: Ms. Rosa M. Lorredo, Officer-in-charge, Research and Development Division, Local Water Utilities Administration, Philippines.

C. Adoption of the agenda

6. The provisional agenda for the Workshop was adopted by all participants (see Annex III).

D. Overview of training methodology and workshop procedures

7. The INSTRAW representative, Ms. Borjana Bulajich, explained the modular training package on "Women, Water Supply and Sanitation". She pointed out that the package is aimed at three different target groups: senior officials of Ministries of Education, Health and Planning, development planners and provincial authorities in charge of water supply and sanitation technologies; and representatives of non-governmental organizations, including women's organizations which are active in water supply and sanitation projects and programmes.

8. The flexibility of this training package was assured by a parallel activity, namely the possibility of training different target groups simultaneously and of using modular training material which enabled users to adapt it to their own needs. Each modular unit was supplemented with audiovisual support material, such as transparencies and sound-slide packages, as well as with additional reading and bibliographies; key-issue checklists for group work; evaluation forms for participants; and a trainer's guide.

9. Ms. Bulajich explained that the training packages had been field-tested in developing countries and were designed to suit national needs. They may be adapted and modified by local professional staff at the community level. Instead of a conventional training text, modules have been created which comprise oral and visual media, with defined objectives and extensive group work.

10. Each module is a self-contained training/learning unit, designed in such a way that it can either be used in full or partially for introductory training courses, and for containing courses covering a given subject area. Clear instructions are given with each session as to precisely what material is required, so that local instructors can coordinate their lectures with the accompanying sound-slide package.

11. Finally, she pointed out that each module comprised a topic given in audiovisual or printed form to facilitate both teaching and learning, together with an "Instructor's Guide for the Trainer/Lecturer".

12. She invited participants to introduce themselves and to express their expectations of this Workshop.

E. Technical session I: Presentation and discussion of training module I: The International Drinking Water Supply and Sanitation Decade (IDWSSD) and beyond

13. Module I, the International Drinking Water and Supply Decade (IDWSSD) and Beyond, was presented by a representative of the UN Department of Economic and Social Development (UNDESD), Ms. Margaret Howard, Economic Affairs Officer, Science, Technology, Energy, Environment and Natural Resources Division.

14. In her presentation of Module I, she noted that while some progress has been made in terms of increasing service coverage, particularly in the rural water and sanitation sectors, and in relation to raising awareness of some of the critical issues impeding womens' involvement in water and sanitation activities, a number of problems stemming from inadequate water supply and sanitation facilities still remained in developing countries, with severe consequences in relation to health, economic and social costs, and in the loss of productive time and energy on the part of women who were overburdened with time-consuming water collection tasks.

15. She pointed out that such complex and multi-dimensional problems required multi-disciplinary approaches taking into account the linkages between the socio-economic, technical, health, agricultural and environmental aspects, as well as issues relating to the management and coordination of water supply and sanitation activities. Such approaches must be oriented so that women's activities and

time can be directed towards more productive objectives; they must therefore take into account the crucial role of women in maintenance and managing of water and sanitation facilities, achieving health benefits, broadening economic and social development, and involvement in community development activities, and in income-generating initiatives.

16. The DESD representative further explained that the International Drinking Water Supply and Sanitation Decade, launched by the UN General Assembly in 1980, directed the attention of the international community and governments towards a number of these issues, stipulating its basic principle that access to safe water and sanitation facilities is a basic human right without which populations cannot achieve a quality of life consistent with human dignity. In urging an improvement in the standards and levels of water and sanitation services, the UN General Assembly resolution called upon governments to respond in terms of establishing policies, setting priorities, strengthening institutional frameworks and in heightening public awareness with regard to the need to intensify the involvement of women in water supply and sanitation activities.

17. She explained that the United Nations system of organizations was likewise called upon to provide financial and technical support to these efforts, and she described a number of the initiatives and mechanisms set up in response to the IDWSSD basic precepts.

18. The UN International Research and Training Institute for the Advancement of Women (INSTRAW) with its mandate of supporting the advancement of women and their integration into development processes through research, training and dissemination of information, undertook a number of training activities during the Decade, including five seminars held in cooperation with the ILO in Africa to present the earlier of version of the women, water supply and sanitation training packages.

19. The Copenhagen Declaration of 1980 stipulated the promotion of full participation on the part of women in the planning and implementation of WSS programmes, and the involvement of women in the choice and application of technologies for water supply projects.

20. A UNDP project, Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWWESS) was launched in 1983 in response to water supply and sanitation needs, and has provided advisory services, training and publications on WSS issues.

21. She further pointed out that as a direct result of the General Assembly resolution on the IDWSSD, a Steering Committee had been established by the UNDP and WHO, which continued to serve as a forum for reviewing and developing policy, improving coordination in the management of individual WSS programmes, and in undertaking preparations for consultative meetings on these issues.

22. She noted that one of the main bodies emanating from the IDWSSD Steering Committee has been the Inter-Agency Task Force on Women, comprising some 11 UN organizations involved in water and sanitation activities.

23. It was pointed out that while there have been a number of achievements

which have resulted from the IDWSSD in terms of improving coverage in the rural water and sanitation sectors, coverage in the urban sectors is expected to be lower by the year 2000. Thus, given the unlikelihood of increases in sector funding, the key objective of the 1990s must be to make greater and more effective use of available budgets, by reducing costs and raising outputs. Approaches should therefore include greater involvement of women in the execution of local maintenance and management activities to improve operation while lowering costs; achieving greater flexibility in technology and service levels; moving towards greater decentralization of decision-making to the field level, involving women and communities as "partners" in programme planning and implementation; incorporating women into local financing systems, and in the design and implementation of cost recovery measures.

24. The DESD representative further noted that the concept for a framework for support and global cooperation in the 1990s, which had derived from a meeting in Interlaken, Switzerland held in 1987, identified several areas for support required for future action. These included: the strengthening of national institutional structures; greater support in assessing personnel and human resources development programmes; more support to applied research on low-cost technology programmes; exchanges of information; measures to integrate WSS programmes with rural development activities, taking agricultural development, irrigation, employment and income-generation and health promotion into account.

25. Within the framework for cooperation, support at the country level to achieve greater water supply and sanitation service coverage would be coordinated by the UNDP Resident Representatives. At the regional level, the Regional Water Supply Groups (jointly sponsored by the World Bank and UNDP) would be strengthened to respond to requests from developing countries and would hold periodic topic-specific consultations.

26. She explained the establishment of the Water and Sanitation Collaborative Council, comprising a wide membership of United Nations organizations, multilateral and bilateral donor agencies, and non-governmental organizations, which was working towards the achievement of expanded availability of sustainable water supplies, sanitation facilities and waste management services. The Collaborative Council expected to hold periodic global consultations, one of which was held in New Delhi in 1990. The statement which emanated from this meeting embodies four basic guiding principles: people and the environment, stating that women and children are major victims of environmental degradation deriving from rapid population growth and urbanization; people and institutions, urging that governments act not as providers, but as facilitators and promoters, enabling local institutions to deliver services; community management, embodying principles of community empowerment with ownership and control of their own water supply and sanitation systems; and financing and technology, stipulating the need to make services more cost-effective and responsive to needs, and involving women more closely in the choice of technologies and service levels. She also informed participants on two other United Nations system-generated events having important implications for the role of women in sustainable development - the International Conference on Water and the Environment, held in Dublin, Ireland in January 1992, which included women in its statement, and the United Nations Conference on Environment and Development (UNCED) of June 1992, together with Agenda 21.

27. In concluding, the DESD representative stressed the principal measures needed to strengthen and broaden the role of women: namely, their involvement in project preparation teams; the identification of implementing organizations for community participation and involvement of women; and the need to make budgetary provisions for these aspects in WSS programmes.

28. The sound slide package on "Women, Water Supply and Sanitation", was shown after the presentation of module I.

29. Following the presentation of Module I, participants divided into two working groups, and during the working group session, they addressed the following two questions: (1) What are the present problems women face at all levels of water supply and sanitation projects and programmes? (2) What are feasible solutions to overcome those problems?

Report of Group I

Chairman: Mr. Abdul Hameed Naqshbandi (Pakistan)
Rapporteur: Ms. Rebecca M. Ducusin (Philippines)

Question (1)

1. There is little involvement of women in the planning, programming, implementation, and evaluation of water supply and sanitation projects;

2. There is a lack of education and training and insufficient information dissemination with regard to the supply of potable water and sanitation;

3. Resources, financial capabilities and technical know-how are lacking;

4. Potable water supplies and sanitation services are scarce or unavailable;

5. There are difficulties in communication.

Question (2)

1. The United Nations should continue with the programmes beyond the IDWSSD, in water supply and sanitation;

2. International agencies should add more resources to ensure the participation of women in planning, programming and implementation of water supply projects with the support of national governments;

3. There should be political commitment on the part of governments, as well as policies wherein women must be involved in WSS projects;

4. Women should be represented in different agencies responsible for WSS at each level;

5. Better information dissemination is needed at all levels;

6. Women should be involved in enhancing their income through income-generating activities;

7. Training and institutional development of WSS at different levels is required;

8. In instances of water scarcity, potable water supplies should be separated from water used for other purposes, to ensure an adequate supply of potable water;

9. There should be more positions for, and appointments of women at upper levels of agencies at the national level responsible for WSS programmes;

10. Greater communication and coordination is needed among different agencies involved in WSS and in the private sector.

Report of Group II

Chairperson: Ms. Uma Pillai (India)
Rapporteur: Mr. Khoda Bux (Bangladesh)

Question (1)

1. There is a complete lack of awareness of women's concerns and of the role of women in the installation and maintenance of WSS services. These are viewed as technical problems, and extension agents generally deal with men. Men do not consider problems such as children's health, children not going to school, or hours spent gathering water. Women are generally not consulted about the location of water facilities.

2. Many powerful donor agencies insist that communities demonstrate a willingness to pay before donors will provide assistance to water supply projects. But many poor communities cannot even pay for food, and they therefore cannot mobilize funds for operation and maintenance.

3. Sewage disposal in urban areas is a considerable problem, for which there are no adequate low-cost solutions. Inadequately treated waste is usually dumped into rivers and it is extremely costly to clean up the rivers.

4. Education in most of the countries is inadequate. Many people do not understand the connection between poor water quality and disease.

5. Women do not have the confidence and ability to make their concerns heard. Women's organizations are not strong; they rely on the government and not on themselves for water and sanitation services, making the latter unsustainable.

Question (2)

1. Women need support services close to home in order to participate in any group activity. Such services might include, for example, child-care or training in the home environment.

2. Sanitation per se is not relevant to most organizations at the grassroots level. There is a need to provide a forum (NGO or other) in which women can become mobilized around a common concern - family planning, income-generating activities, etc., and then introduce sanitation at a later stage. Existing organizations should be used wherever possible.

3. Training curricula should be arranged to enable women to manage technology and services, and to understand hygiene and sanitation, by using various communication techniques.

4. There is a need for coordination among women's organizations. These groups must share information and support each other.

5. Technology needs to be "de-mystified". Women should be trained to maintain technology and to acquire greater confidence.

6. Women can and should organize pressure groups to make changes at various levels of government. Such a group may become the core around which a technical network can be built to achieve a greater degree of political will; to seek help, to speak up and gain confidence; to deal with operation and maintenance of WSS projects; to deal with national issues such as environmental degradation; to expand networks and replicate these through technical cooperation among developing countries (TCDC) and technical cooperation among developing villages (TCDV).

A video entitled "Safe Water 2000" was also shown to the participants.

F. Technical session II: Presentation and discussion of training module II: Participation of women in planning, choice of technology and implementation of women, water supply and sanitation projects

30. Module II, Participation of Women in Planning, Choice of Technology and Implementation of Women, Water Supply and Sanitation Projects, was presented jointly by Mr. Cengiz Ertuna, Chief, Water Resources Section, Natural Resources Division, ESCAP, and Mr. Peter Hjorth, Associate Professor, Division of Water Resources Engineering, Asian Institute of Technology.

31. Mr. Ertuna explained that the general objective of this module was to enable users to identify the mechanisms for incorporating women in planning, choice of technology and implementation of women, water supply and sanitation projects. Women, considering their role in the use of water, and as the principal influence on the family's sanitary habits, could contribute very significantly to the improved planning, functioning and utilization of water and sanitation facilities, especially when provided with appropriate training and when involved in the planning, design, and operation and maintenance stages, as well as in complementary health education programmes.

32. In order to promote the participation of women in water supply and sanitation projects, the respective roles of women as part of development efforts, of development planners and engineers in government and in external agencies, and the important role of women's organizations must be emphasized.

33. Women's active participation in water supply and sanitation projects could contribute significantly to generating ideas in policy, mobilizing labour, providing resources and disseminating and implementing innovations which in turn would generate direct benefits in improving the quality of life. Policies on the involvement of women in community projects must first be adopted by the government of a country for the successful implementation of water supply and sanitation projects.

34. Implementation of such policies depends largely on development planners and engineers. There must therefore be a commitment on their part towards the active involvement of women in all stages of a project.

35. In this regard, women's organizations could play an important role in ensuring the participation of women in water supply and sanitation projects at the national level, through organizing campaigns, advertising national programme goals and activities, fostering cooperation of affiliated women's groups, and through participating in governmental activities to ensure that women's needs and participation are included. Writing about women, water and sanitation, and through other publicity channels, preparing case studies and collecting data on the needs and capabilities of women, organizing or supporting research on women's issues, and supporting self-improvement activities, were other aspects of work that could be undertaken by women's organizations at the national level.

36. At the local level, women's organizations could be active in organizing interviews to ensure that adequate technology is chosen and in consulting with technical agencies so that appropriate design and construction methods were employed and so that convenient and easily maintainable facilities were used. Women's organizations could also facilitate greater involvement of women by encouraging the recruitment of women for various aspects of work, by organizing fund-raising campaigns and by providing direct material support to water and sanitation projects.

37. In spite of the current emphasis placed by many governments on the construction of facilities to serve as many people as possible within a given budget, many communities had still not been served. Those governments should give priority to serving the unserved communities. Participation of women in water and sanitation projects should be included in, and implemented, as government policy.

38. Professor Hjorth then addressed the objectives of module II, and how to reach a satisfactory level of planning, installation and utilization of water technologies. He pointed out that a number of evaluation reports showed that technologies failed due to lack of consultation with the end-users, and that at the start of all planning, the following issues should be addressed: Why should there be an intervention? What kind of technology would be suitable? Where should the installation be located? When should the project be implemented? Who should do what in the process? How much could be afforded in terms of cost?

39. He pointed out that for a system to be successful and sustainable, there was a need not only to operate it, but also to maintain and adapt the system to changing requirements, and that there should also be technology management. He underlined the importance of evaluation and monitoring on a regular basis, so

that the same mistakes were not repeated, but he emphasized that evaluation in itself was not enough; it was important to look into the feed-back. If a project was to be successful, all resources - time, funds and personnel - should be utilized. He elaborated that a number of projects had difficulties because of the very limited, sectoral approach taken in conceiving and implementing them. In many countries, implementation was undertaken through centralized agencies, while in certain countries this process was more decentralized. He raised the issue of whether one should rely on external funding, or apply a self-sufficient approach.

40. He further described the four guiding principles of the International Conference on Water and the Environment, held in Dublin, Ireland, in January 1992, and presented the requirements for women's involvement in WSS programmes.

41. He pointed out the need to adopt appropriate technologies, while emphasizing that the word "appropriate" is often misunderstood. He elaborated on this by explaining that technologies should be specifically designed and selected in relation to the conditions under which they would be operated, and that the technologies should be financially appropriate, with an appropriate level of service, and maintenance requirements, and that they should take fully into account the possible soco-economic and health aspects. He also stressed that technologies must be adaptable to the participatory process, and to the particular and varying needs of communities. He briefly described some of the more common technologies employed for ground and surface water exploration, water treatment and sanitation.

42. He pointed out that environmental constraints were often not taken into account by "suitcase" consultants, who often did not take the time to familiarize themselves with communities. He stressed the need to assess what skills were available in the community, and to ascertain what kind of training programmes were necessary. Local skills should be fully integrated into the implementation of projects, including those skills deriving from the private sector. During the feasibility study phase, it was important to have a dialogue with women and to apply a participatory approach. Pilot projects were very useful, as they allowed for an assessment of the feasibility of an activity, and of the relevance of certain techniques and technologies.

43. During the discussion which followed this presentation, a question was raised as to which technologies were acceptable, manageable and "affordable" in urban areas. It was pointed out that urban areas posed very difficult and complex problems, and that there was a need to involve women's organizations in establishing women as operators of standpipes, thereby ensuring better service, maintenance and accountability. One example was provided that in certain countries, large and rich users take water without paying for it, while the poor must pay. It was also pointed out that in urban areas, women's organizations could play different roles according to their social status and income level. Different aspects of possible involvement of women were described, as well as the need to encourage women to take up technical sciences.

44. In relation to this module, Ms. Aminata Traore, Human Resources Specialist, explained the PROWWESS/UNDP training experiences in Africa. She pointed out that considerable efforts had been made by the United Nations community to promote the

water sector over the past two decades, and that PROWWESS and INSTRAW were the two main institutions involved in promoting women's roles in water-related activities. The efforts by these two organizations were complementary in nature, as INSTRAW addressed senior officials, development planners and women's organizations, while PROWWESS was more oriented towards the grassroots level. She elaborated in detail the PROWWESS methodology, known as SARAR. This methodology showed that engineers or villagers never have the same reaction in a given situation in training. Some had a resistance towards including women in projects, while others supported the need to have women involved effectively. She said that it is not sufficient to include only women; entire villages and communities should be involved in project implementation, while taking into account socio-cultural aspects. She pointed out that the division of labour in different parts of Africa could not be measured, as differing values were placed on labour.

45. Furthermore, the PROWWESS participatory methodology, which was "message-oriented", was needed to develop creative self-confidence, encouraging people to take decisions. Another important dimension of the issue was to focus on a gender approach, which took into account socio-cultural aspects, and which defined who was doing what, how and why. This was a prerequisite for any sustainable development of the water sector, as people could thus identify with the process to a greater degree. She pointed out that water was a very complex issue. The sector needed considerable financing and expertise. She emphasized the need for equal partnership between women, men, children and governments. She also said that governments cannot be blamed for all unsuccessful projects, as it was frequently donors who brought in new technologies, which were often unsuitable to the needs of a given country. Donors did not work together with governments, and often did not wish to support local expertise in the process of project implementation.

46. A case study on successful technology implementation was presented by Ms. Hira Sharma, Superintending Engineer and Manager of Monitoring, India Water Corporation in Lucknow, Uttar Pradesh, India. She pointed out that she had attended the INSTRAW/ESCAP training seminar on women, water supply and sanitation in 1989, and subsequently undertook a follow-up activity. She is in charge of the planning, implementation and execution of the "Tharu Tribal Women's India Mark-II Handpump Maintenance Project" in Uttar Pradesh. She pointed out that in her area, women were undertaking work outside the household, while the men were doing household activities. She explained that she organized training courses for women to maintain the handpumps, indicating that the level of education of these women was so low that they could not pronounce the names of the various parts of the pump. Following the training course, they were able to apply for a loan from the Government, and the women maintained 300 Mark-II handpumps in 20 selected villages. The problem of maintenance had been reduced, as women were taking good care of the pumps. A selected group of eight women were taught breakdown maintenance over a period of six months. To maintain the Mark-II pump, four women were needed to lift the pump in order to replace the washer. These women were divided into two groups, and were paid for maintaining the pump. The Government was therefore spending less money on the maintenance of the pump, and hygiene had been improved. However, there was still the need to address the problem of disease. Since this project had been so successful, the Netherlands was considering financing such projects over a larger area of the country. In

view of the fact that four persons had been needed to assemble the Mark-II handpump, progress was now being made in producing the Mark-III handpump, which required only two people to replace the washer.

47. She supplemented her presentation by showing slides of her project.

48. The participants then divided into two working groups. The two questions posed were: (1) What are the existing constraints women face in project planning, implementation and operation? (2) What actions or mechanisms would you suggest for more effective involvement of women in water supply and sanitation projects?

Report of Group I

Chairman: Mr. Rodolfo S. Feraren (Philippines)
Rapporteur: Ms. Salmah Zakaria (Malaysia)

Question (1)
Project planning

(1) There is a lack of strong political will on the part of national governments. For example, according to participants from Bangladesh, a 10-15 percent quota of women is selected by political parties for administrative positions. These women should be capable and able to contribute effectively, which is not the case.

(2) Religious and political constraints were highlighted. Certain religious and political leaders may see the involvement of women as threatening to the existing cultural values, and to their own power.

(3) Women are lacking in technical education. Even if the women are technically qualified, they lack confidence, primarily due to a lack of exposure and to cultural "taboos".

(4) Usually, central governments are involved in designing master plans for water projects, but women have minimal roles at this level, owing either to social values or to their level of education.

(5) It is not important whether men, women, or technically trained personnel are involved in development programmes; it is the degree of commitment towards women's needs which is crucial, and in some cases women engineers are more sensitive in this regard.

Implementation and operation

(1) The same constraints as those above were emphasized, with two additional constraints:

(a) Women are limited in mobility, and cannot move around as freely as men.

(b) Physical constraints, such as the designs of many handpumps, which are oriented more towards male, than female users, pose difficulties for women.

(2) In the case of China, due to the destruction of forests, there is a lack of fuel for boiling water. People have been encouraged to use biogas to boil water, but funds are lacking.

Question (2)

(1) With regard to the problem of insufficient political will:

(a) there should be global monitoring of actions being undertaken by both national and international bodies. Criteria for measuring involvement of women should be identified by the agencies involved.

(b) Funding/voluntary/donor agencies should insist on greater representation of women in agencies responsible for water supply and sanitation projects.

(c) National governments should be committed to increasing the participation of women in the development of their master plans.

(2) On the problem of religious, political, cultural and educational constraints, the participants stressed:

(a) a greater need for information dissemination on WSS and women's involvement;

(b) government and religious groups must interact with each other;

(c) greater emphasis should be placed on education. There should be a blueprint for expanding education for women;

(d) community motivation should be strengthened for both men and women, in order to encourage men to allow women to participate in projects.

(3) On the lack of confidence on the part of women:

(a) income-generating activities should be formulated for women in order to improve their financial positions and enhance their confidence;

(b) pilot demonstration projects should be undertaken, involving women.

Group II
Chairperson: Mrs. Riffat Afzaal Zaidi (Pakistan)
Rapporteur: Mr. Khoda Bux (Bangladesh)

Question (1)

(1) Planning usually follows a "top-down" approach. The top level does not see the need for consulting local communities.

(2) There is little community and/or women 's participation in WSS

activities. Women are generally not well prepared for participation in planning processes.

(3) There is generally a lack of social awareness in terms of involving women in WSS planning and in implementing projects at local levels.

(4) There is a lack of strong political will.

(5) There is a limited number of women's organizations which can stimulate women's involvement in WSS activities; their voices are rarely heard.

(6) There is a need to increase the number of women students in technical sciences.

Question (2)

(1) Administration should be decentralized to the community level, to involve women in all stages of planning, implementation and operation of water supply and sanitation projects. Policy change will be required, both for decentralization and for the required participation of women.

(2) Institutional strengthening is greatly needed at local and community levels.

(3) Women should have greater access to technical know-how in relation to water supply and sanitation issues. Technical schools should be accessible to women; incentives may be needed to encourage women students.

(4) There is a need to sensitize trainers in technical and vocational schools to raise awareness among technical students of the value of women's involvement at local levels in operation and maintenance of WSS facilities.

(5) There is a need to promote and support women's organizations in overall development programmes aimed at improving the quality of life.

(6) Committed, high-ranking officials can act as role-models in encouraging women to participate in development processes. This may serve as an effective catalyst in WSS.

G. Technical session III: Presentation and discussion of training module III: Role of women in hygiene education and training activities for water supply and sanitation

49. Module III on the role of women in hygiene education and training activities for water supply and sanitation projects was presented jointly by Ms. Nitaya Mahabhol, Extra-ordinary Specialist in Public Health Engineering, Ministry of Public Health, Thailand, and Ms. Bilqis Amin Hoque, Scientist (Environmental Engineering), International Centre for Diarrhoeal Disease Research (ICDDR), Bangladesh.

50. Ms. Mahabhol presented in detail module III, and stressed that water supply, sanitation and hygiene education are inseparable. While scarcity of

water brought health threats, abundance of water could heighten contamination, where hygienic practices were not routinely carried out. Women's roles were underlined and recognized as one of the major keys to the success of sustainable improvement of water supply and sanitation for the improvement of the quality of life. She pointed out that various ways and means were needed to reach out to women and enhance their fruitful participation at all levels of project implementation, as women were the end-users and managers of hygiene. Up to now, however, training in water supply projects had not included hygiene education, and women were often excluded from any training activitity. Training was one among various ways to prepare women extensively for hygiene education.

51. She elaborated in detail the ten steps of systematic training and explained them as a framework which could be applicable to any target group and to any topic. She pointed out that the most crucial step in any training process was to identify training needs, and to be be very familiar with the nature of the audience to be trained. There should be more selection of women as trainees, and special arrangements should be made to accommodate female trainees (i.e., through establishing child-care centres). As was also emphasized at UNCED, indigenous skills and know-how should be drawn upon during project implementation. Evaluation and follow-up were also priorities if any project or programme is to be successful.

52. She concluded by saying that human resource development was of the utmost importance for any society. Special attention should be geared toward women in training and education, or otherwise they would continue to be subdued, and the success of water supply and sanitation projects would remain an illusion.

53. Ms. Hoque presented a project on training women handpump caretakers in Bangladesh of which she had been in charge, and which had been successfully completed in 1985. She pointed out that the role of women as drawers and managers of water had been recognized over the last decade. It was important that women's participation in handpump maintenance was promoted and implemented. Several pilot projects had reported that they could maintain pumps but those had not selected rural women; nor had systematic evaluations of handpump performance been carried out. Her project had been focusing on the training of women as pump caretakers in a pilot study in Bangladesh. The main objective was to improve the efficiency of common rural women as pump caretakers on the bases of appropriate training. The training approach adopted was similar to that described in module III, which demonstrated how that training module could be modified and adapted to the real situation in a given country.

54. The pilot project was a component of the Mirjapure Handpump Project. One of the objectives of this project was to field-test the newly developed Tara pumps. In order to study the appropriateness of the pump in terms of its maintenance by women, a training programme had been undertaken and monitored through a specified pump inspection system. There were 140 pumps (Tara), 30 of which had been assigned for the programme during the last 15 months of the project. All, with the exception of the 30 pumps, had been maintained by project mechanics. However, all pumps were monitored once in 14 days in terms of their discharge and leakage conditions.

55. As the area was similar to most of the other rural areas of the country,

the programme had started by analysing the target population and their needs. It was a male-dominated society and the majority of families were Muslim. "Purdah" was highly practiced. More than 50 per cent of the males and more than 80 per cent of the females were illiterate. The capacity of the common women to maintain the pump was very doubtful. The project team decided to sensitize the community and to motivate the religious, political and social leaders by explaining to them the benefits of such women's involvement and by assuring them that due respect would be given to the local culture. The users of the designated pumps were asked to give names of three women per pump whom they thought were suitable for the job, which was voluntary. Those women were approached and motivated to attend the main training course. It consisted of a one-day classroom session at the project office and one to two hour practical sessions at pump sites. The women were highly encouraged to participate and have discussions during the sessions. Male partners were welcomed to those sessions.

56. At the end of the 15-month period, the proportion of well-functioning pumps maintained by women was 89 per cent and those maintained by project mechanics was 86 per cent. The water consumption rate (36 l/c/d) among the users of pumps maintained by women was higher than that among the users of pumps maintained by project mechanics (34 l/c/d). Compared to the project mechanics, the women's maintenance programme was highly cost-effective. Those women caretakers were 100 per cent housewives, about 80 per cent illiterate and about 80 per cent Muslim.

57. Thus, common rural women could maintain their pumps efficiently and carry out their responsibilities successfully, provided they were trained appropriately. Illiteracy, socio-economic factors or cultural considerations were not barriers to their involvement in WSS projects. Training was very important, however. The community approach and motivation were integral components of training design. The components mentioned in module III compared very well to the activities undertaken during the project study.

58. Following the presentation of module III, a number of questions were raised on the usefulness and advantages of Tara handpumps. It was explained that the Tara handpump was a simple and very cost-effective pump which could be maintained by two persons. It could handle pumping of water within 15 metres of the surface, and was categorized as between a shallow and deep pump, while the India Mark II pump was a deep pump. In the areas where there was a need for deep pumps, UNICEF Six pumps and revised Tara pumps were used.

59. The discussion continued on issues relating to the process used in Bangladesh in achieving a community approach; how the Government could become involved; the prior interface with village or community leaders before training; and whether the women were organized to attend training sessions. It was explained that this particular project was aimed at setting up guidelines for the Government, in order to take into account women's involvement. At the governmental level, there were different departments which worked with communities, water supply and sanitation. The Government organized training workshops for both men and women, and it invited local leaders and heads of villages to attend the training seminars for beneficiaries. Upon the completion of training sessions, the pumps are given to the trainees. In the Public Health Department, field workers train both men and women on the maintenance of pumps. The participant from Philippines explained how the Government of the Philippines

coordinates the four departments involved in the water sector. The representative of UNICEF indicated that this was an excellent way of looking at the needs of women, and he requested clarification on critical components in training for hygiene education. It was pointed out that hygiene education is an extremely difficult and sensitive issue, involving great patience in bringing about changes in traditional habits. For example, in rural Bangladesh, women wash one hand before defecating and the other hand before eating, using soil or ash. The project explained to them the importance of washing both hands, using soap. They eventually understood and adopted this method, but continued using soil and ash, which have the same cleansing effect as soap, which they could not afford. It was also explained that in Thailand, the Department of Health was trying to recruit women's groups, particularly in projects related to food preparation and food sanitation. A question was asked on contamination and protection of water resources and the role of female caretakers. It was acknowledged that the protection of water sources is a complex issue, as there are various ways of contaminating these sources -an area requiring further improvement. It was stated that in Thailand, software is more important than hardware. In Bangladesh, storage contamination is a problem and women are encouraged not to store water over long periods of time.

H. Technical session IV: Presentation and discussion of training module IV: Participation of women in management of water resources, water supply and waste disposal

Module IV, relating to the participation of women in the management of water resources, water supply and waste disposal, was presented by Ms. Marcia Brewster, Economic Affairs Officer, Water Resources Section, Natural Resources Division, ESCAP.

61. She first presented a brief picture of water availability on earth, emphasizing that the finite amount available was insufficient to meet the growing demands from an expanded population, industries and agriculture. Combined with rising demand, there had been a deterioration in the quality of water available as well as decrease in water storage areas. Threats to water sources resulting from deforestation of watershed areas, overexploitation of groundwater, high soil erosion and siltation, and others, had decreased the availability of water to meet society's growing needs. Future development along the same lines was not sustainable.

62. It was necessary to view the water resources of a country as a system, involving social and economic impacts of man's interventions, institutional and legal aspects, physical threats and sustainable development. Governments faced with water shortages even in the long term must begin to think about water conservation and water efficiency, rather than simply trying to meet growing demands with nw sources of water. Water management involved a balance between supply management and demand management. Traditionally, governments had concentrated almost entirely on management of supply sources; in recent years, however, it had ben necessary to consider declining availabilities. Therefore, the new approach emphasized demand management, which aimed at influencing how water was used, employing various tools to promote the desired levels and patterns of use. It was generally required in areas suffering from water

shortages or drought. The objectives of demand management included: improving allocations of water among users; reductions in unnecessary use and wastage; postponement of construction of nw facilities; conservation of the resource; increasing revenues; and water quality control. A number of approaches to demand management were discussed including: progressive water charges based on volumes used; water quotas and restrictions on use; conservation; reuse and recycling; leak detection, identification of illegal connections and repair; and use of ow quality water for certain applications. Management of water quality was also discussed, including ways to involve the community in protection of local water resources.

63. A number of examples of how to involve women in water and sanitation management were cited in the module. Some examples included interventions of women in urban areas as managers of communal water points or water vending stations and as collectors of recyclable wastes. In rural areas, women may become managers of communal water points, members of water and sanitation committees or women's water groups.

64. Economic tools for demand management were discussed. Tariffs on metered supplies, especially progressive block rates, were suggested for urban water supplies, while quotas and flow restrictions had been used to reduce demand where meters were not economically feasible. Leak detection and repair could make large additional quantities of water available at municipal levels. In agriculture, tariffs could be levied on the basis of crop area, number of irrigations, type of crop or flat rates. In industry, tax rebates or subsidies could be provided for "clean" processes, recycling or treatment of water, while fines could be imposed on toxic effluents. Options for raising funds at the community level included: voluntary fund-raising drives for a specific water or sanitation facility; community revenue from general taxes; production cooperatives or water cooperatives putting aside a given percentage for operation and maintenance of the water supply facilities; and village revolving funds, which required good repayment records before additional beneficiaries could be served. Other types of water charges were explored including regular monthly charges per family or by size of household; and spot cash payments to purchase water from a vendor or for use of water at a coin-operated kiosk.

65. It was noted that in all these approaches the role of women as managers of water resources and the environment should be recognized and taken advantage of.

66. Following the presentation of module IV, a question on legal and economic aspects of water management was raised. It was pointed out that charging people in rural areas was a considerable problem; water was not available for large segments of the population. Moreover, water for drinking often competed with demands for other uses, and it was difficult to allocate water for drinking purposes in drought situations. In China, for example, the majority of people did not pay for water in rural areas; generally, the sources of drinking water was surface water. There might be a need for laws to enforce payment, but the overriding problem was water quality and hygiene. It was pointed out that demand management was most relevant at times of water shortage, when there were competing demands. Another issue was raised which related to community management, whereby villagers convened to distribute water among themselves. There was a need for regulations to make the payment process more equitable.

67. Following this discussion, the participants divided into two working groups. Three questions were provided to them: (1) How would you apply new approaches in water resources development? (2) What economic tools would you apply for water demand management? (3) How would you include women in water resource development planning, paying particular attention to the financial and management control?

Report of Group I

Chairperson: Ms. Hira Sharma (India)
Rapporteur: Mr. Hua Jiang (People's Republic of China)

It was pointed out that question (1) was addressed from the national level, taking into account socio-economic, cultural and religious aspects. Questions (2) and (3) were combined into one, and were approached from the management and financial standpoints.

Question (1)

(1) National plans should include and take into account different local issues;

(2) There is a need to apply appropriate technologies according to different conditions of various regions;

(3) There should be integrated planning and management of competing and multi-purpose uses of water, which should be acknowledged at the national level;

(4) There is a need for appropriate planning and implementation of the development and management of water resources, including the hydrological basin as a unit;

(5) Hydrogeological research must be applied in exploring water resources, in order to obtain the most economical use of water.

Questions (2) and (3)

(1) Local women's federations should sensitize local rural women to realize the importance of water and sanitation, and to motivate the community in the proper use of technologies and in making proper financial arrangements;

(2) National policies on water resources should be framed in such a way that women's organizations have a major role in the planning, implementation and management of WSS implementation and policy. In this process, socio-economic, cultural and religious factors should be taken into account.

(3) At the maintenance level, women's organizations should be given the responsibility for equitable distribution of water, depending upon various socio-economic circumstances;

(4) Waste-water disposal and water use reduction measures should be emphasized. There is a need to establish regular monitoring systems whereby

installations which are in disrepair can be rapidly repaired;

(5) Mass media should be used in motivating communities to recycle water.

Report of Group II

Chairperson: Mr. Rutr Klomchum (Thailand)
Rapporteur: Ms. Nitaya Mahabhol (Thailand)

Question (1)

(1) Demands for water from various national activities are competing fiercely. There is a strong lobby for industrial and agricultural development, which prevails over meeting the basic needs of the population. Legal support is of primary importance in resolving this.

(2) Conservation measures are needed to suit each country and environment;

(3) An effective leak-detection programme for conventional WSS distribution systems is required;

(4) Illegal house water connections must be identified and eliminated. Legal punishment for rule-breakers should be enforced;

(5) Flat rates may discourage the efficient use of water.

Question (2)

(1) Improvements in technical designs of distribution systems are needed to improve efficiency;

(2) Research and development on innovative recycling methods and recovery are needed;

(3) Water-metering is required, for measurement of volume used;

(4) Water charges should be increased on water use beyond the basic minimum needs by using an increasing block rate tariff structure;

(5) Incentives or tax rebates can be given to industry to re-use and re-cycle water;

(6) Charges for water use by farmers can no longer be avoided.

Question (3)

(1) Women can intervene to increase social awareness of water wastage;

(2) Women can encourage conservation, recovery and recycling of water at the household level;

(3) Women can raise awareness of their right to a better quality of life;

(4) Governments should promote and support women's activities as groups to initiate conservation programmes;

(5) Women should have access to information on water conservation measures, water pollution, etc. NGOs should sensitize women's groups by disseminating information on these issues;

(6) Strong consumer-protection measures aimed at women need to be legalized or strengthened: the right to meet basic minimum needs; solid programmes of conservation from the government or water authority; better quality of water; monitoring of water quality; the right to demand reimbursement by the government in instances where minimum family needs are not met;

(7) Women should be trained to increase their managerial and financial skills.

I. Technical session V: Presentation and discussion of training module V: Evaluation and monitoring of water supply and sanitation programmes and the role of women

68. Module V, relating to the evaluation and monitoring of WSS programmes and projects and the role of women was presented by Ms. Borjana Bulajich, Social Affairs Officer, INSTRAW.

69. She began her presentation by showing the sound-slide package on "The Involvement of Women in Evaluation and Monitoring of Water Supply and Sanitation Systems".

70. She then explained the conceptual difference in approaches to evaluation in the 1960s and in the 1980s. In the 1960s, evaluation had been donor-oriented and had been limited to the identification of beneficiaries and to cost-benefit analyses with a bias towards cost. Projects had not involved beneficiaries; there had been inflexibility in execution; and there had been a lack of monitoring and evaluation. By the 1980s, evaluation was expanded to include the benefit side and a number of issues had been addressed, such as: what to measure, how to collect information at a reasonable cost and in a timely manner, and who should undertake it. As a result, the question of how to build gender-sensitive evaluation into project design was raised since, by and large, women's issues had not been built into programme/project design.

71. She pointed out that INSTRAW had organized the consultative meeting on "Evaluation methodologies for Programmes and Projects on Women in Development (WID)" to discuss the evaluation of programmes and projects - both mainstream and women-specific, with a view to promoting the integration of women in all aspects and phases of mainstream programmes and projects and to enhance the effects of women's projects on development. It was generally difficult for programme developers to define criteria for the success of programmes or projects, particularly in relation to innovative and catalytic programmes and projects related to WID. One of the crucial components of evaluation methodologies for WID was the principle of economic analysis of projects and programmes. There was a difficulty in applying cost-benefit analysis with precision as there were a number of WID programmes and projects that had been evaluated as too costly in

terms of narrowly conceived cost-benefit analysis, without taking into account wider socio-economic objectives and developmental change advocated by WID approaches.

72. She further elaborated areas for improvement of evaluation methodology for programmes and projects on WID, which included: effect/impact analysis; data bases; cost effectiveness of data collection; types of expertise and evaluation; human/cultural factors in evaluation; feedback and follow-up; training; participatory evaluation; purpose of evaluation; institutional constraints; sustainability and community-based approaches.

73. Ms. Bulajich explained the difference between and functions of evaluation and monitoring of water supply and sanitation projects. Evaluations, she explained, involved the assessment of the achievements of a project and of the activities, methods and financial inputs by which these achievements had been reached. Evaluations were carried out at specific points in time in the project cycle, e.g., at the end of a pilot stage, at mid-term, and at the administrative end of a project. It consisted of the scheduled collection of information on implementation and functioning from the lowest levels. Monitoring enabled the project management to follow the progress of the project, to assess users' reactions, to keep track of trends and new developments and to collect factual data as inputs for periodic evaluations.

74. She furthermore explained the differences between conventional and participatory evaluations and the purpose of participatory evaluations.

75. Ms. Bulajich described the Minimum Evaluation Procedures (MEP) developed by the World Health Organization. She said that MEP was designed to evaluate functioning and utilization and impact. To evaluate functioning of improved water supplies and latrines, the WHO advocated four key items for water supply: sufficient water quantity; acceptable water quality; reliable supply; and good accessibility. They measured three items for sanitation: growing proportion of households with an installed and completed latrine; good quality design and construction; and latrines working properly. However, with regard to evaluating the adequacy of water quantity, it was important to find out whether men and women had different water uses, whether the water supplied was sufficient to meet those needs, and if not, which water uses prevailed. For the functioning of a latrine project, it made a difference in performance whether felt needs and priorities for latrines were different for men and women, as well as for different economic groups.

76. With regard to evaluating women's involvement in water supply and sanitation projects, Ms. Bulajich elaborated a checklist on how to involve women in project preparation, planning, implementation, training and evaluation, and follow-up. She pointed out that evaluation of benefits in water and sanitation projects had two dimensions: assessment of the impact of projects on the users, and the impact which women's involvement had on the projects. Improved water supply and sanitation projects had many benefits for women, such as: reduction in the time and energy consumed by water collection; easier management of their daily tasks; and greater use of water for cooking, cleaning and small-scale production. On the other hand, however, projects might have negative impacts on women, such as: serious social and economic consequences; and greater

involvement of women in carrying out the full burden of installation, maintenance and repairs.

77. The INSTRAW representative pointed out that one of the new emerging trends was the evaluation of project sustainability. That meant assessing or measuring "the ability to keep up the establishment, functioning, use and benefits of improved facilities and practices without detrimental effects on the environment, also after special assistance has been phased out". As no community remained static, sustainability could only be achieved by strengthening problem-solving capacities in communities and by addressing changes in demand, interest, capabilities, finance, natural resources and policies. The key in this process of achieving sustainability was building human and institutional capacity in communities and partnership agencies.

78. She stated that evaluating sustainability involved measuring capacities and development in four main areas: on-going implementation of functioning and used facilities and hygiene education by agencies and communities; development of human capacities at community and agency levels; building of institutional capacity in groups, communities and agencies; and continuation of inter-organizational cooperation.

79. Ms. Bulajich furthermore stated that while sustainability referred to the preservation of results and benefits in a particular project area or community, replicability referred to the ability of project agencies and communities to implement the same projects in other areas with similar conditions and problems, with little or no dependence on external expertise or funds. Replicability of a project as a whole could be evaluated by examining: project inputs, institutional setting, financing execution and "representativeness". In looking at the replicability of women's involvement, she said, one can ascertain whether water and sanitation projects have developed effective methods and techniques for women's involvement which were, or could be, replicable in other communities and areas.

80. Ms. Bulajich concluded by reiterating that evaluation and monitoring of water and sanitation projects had become important management tools. They served to improve the implementation of projects, and especially their effective life after completion of the installation operations. Project evaluation was becoming less an external judgement tool on whether investments had been well spent and more a means of learning from programmes and improving project inputs and processes.

81. In both monitoring and evaluation, women and women workers are important partners, as they have personal experience with local water and sanitation conditions, and much of the work involved is socio-culturally appropriate for them. She stated, however, that this partnership could only be effective when in the design of evaluation and monitoring systems, women's roles were already taken into account and provisions were made to enable them to participate.

82. Following the presentation of Module V, participants decided to work in one group. Four questions were posed: (1) List the major areas for improvement of evaluation methodologies on WID; (2) List the basic differences between conventional and participatory evaluation procedures; (3) List the main concepts

of community based evaluation and monitoring; (4) How can the project impacts and benefits from women's involvement be improved?

Chairman: Mr. Rodolfo S. Feraren (Philippines)
Rapporteur: Ms. Indrani Sen (India)

83. The participants endorsed all the major points raised in Module V.

Question (1)

(1) Evaluation criteria should take into account women's rights from the beginning of the project. The role of women should be emphasized from the beginning of the project.

(2) Terms of reference should include indicators for women's involvement in the project and identify the roles of women. The criteria for women's involvement should be included in the design stage of the project and the successful case studies should be used as examples.

(3) The data base at the community level should include the social background of women (age, group).

(4) Gender analysis should be conducted on the role of men and women.

(5) Conventional evaluators should be familiarized with the local conditions before undertaking any evaluation activity.

Question (2)

(1) It was pointed out that the conventional evaluation was more quantitative while the participatory evaluation was less quantitative.

(2) The conventional evaluation is more rigid while participatory evaluation is more flexible.

(3) Participatory evaluation would contribute to sustainability.

(4) The conventional evaluation is usually done by external agencies whereas the participatory evaluation uses local agents and experts.

(5) The participatory approach is based on local knowledge and may be less costly and more effective than the conventional approach.

Question (3)

(1) Community feedback should be used to report on constraints and problems encountered during the project as well as the solutions to them.

(2) Representatives of the whole community should be involved in the project and not only women.

(3) More training is required in order to improve the community's knowledge in solving the project implementation problems. There is a need to

motivate leaders to involve women in WSS projects.

Question (4)

(1) There is a need to improve and strengthen data bases in order to come up with design critria which are more user friendly for women, as they are the majority of users.

(2) There is a need to improve communication and information sharing. More media channels should be used for promoting women's roles.

(3) The existing utilities are better maintained and operated if women are involved from the design phase of the project.

(4) Wastage of water can be reduced by involving women and children in educational and promotion campaigns.

J. Adoption of the report of the meeting and closing session

84. The report of the Workshop was reviewed, and with some corrections and additions, was adopted by all participants.

85. In his closing remarks, the representative of ESCAP, Mr. Guangchang Shi, Chief of the Natural Resources Division, expressed his satisfaction at the successful conclusion of the Workshop, due in large measure to the high quality of the resource persons, participants and UN system colleagues, and that ESCAP had been involved in an activity aimed at strengthening the role of women in sustainable development. He conveyed appreciation to DESD for financing the meeting and to both DESD and INSTRAW for their roles as co-organizers, and noted the usefulness of UN system cooperation in organizing and participating in activities which strive to incorporate the role of women in environment-related programmes. He urged all participants to disseminate the knowledge gained to appropriate officials in their countries, and expressed the hope that it would be possible to organize national training seminars in the countries represented at the meeting. In this regard, he informed participants that a project proposal for such training had been developed for implementation in 1993-94.

86. DESD's representative, Ms. Margaret Howard, reviewed briefly the wide range of issues which had been developed in the training modules and discussed by all participants during the Workshop, and she reiterated the conclusion reached as to the invaluable role played by women in contributing to the success of development programmes in the water resources sector. On behalf of DESD, and of the Chairperson of DESD's Task Force on Women in Development, Ms. Dunja Pastizzi-Ferencic, she conveyed deep appreciation to the Executive Secretary of ESCAP and to ESCAP staff, for their technical and logistical support to the Workshop, to the resource persons and participants who contributed so much to its success, and to INSTRAW for its invaluable assistance in providing substantive support. She urged that the momentum generated by the meeting not be lost, and expressed the strong hope that follow-up training activities would be undertaken in the Asia and Pacific region, and that participants would forward

proposals for consideration.

87. On behalf of INSTRAW's Director, Ms. Margaret Shields, and on her own behalf, the representative of INSTRAW, Ms. Borjana Bulajich, thanked all participants for their hard work in producing so many significant recommendations. She pointed out that the success of the Workshop would be judged not only on the basis of what had been learned during the sessions, but also, and more important, on how many similar training seminars the participants would be able to organize in organizations and communities in their countries. She stressed INSTRAW's interest in following up on the results of the Workshop, and in ensuring a multiplier effect. Ms. Bulajich conveyed appreciation to ESCAP for hosting the workshop and to DESD for having contributed the financing, as well as to Mr. Ertuna, Ms. Brewster and Ms. Howard for their commitment and hard work during the course of the meeting. In concluding, she conveyed particular gratitude to the resource persons for their presentations and to the secretariat and support staff for their invaluable assistance.

II. EVALUATION OF THE EFFECTIVENESS AND USEFULNESS OF TRAINING MODULES FOR WOMEN, WATER SUPPLY AND SANITATION

After the demonstration of each module the participants were provided with evaluation questionnaire forms for their assessment of the five training modules demonstrated during the workshop:

Module I - The International Drinking Water Supply and Sanitation Decade (IDWSSD) and beyond;

Module II - Participation of Women in Planning, Choice of Technology and Implementation of WSS Projects;

Module III - Role of Women in Hygiene Education and Training Activities for WSS Projects;

Module IV - Participation of Women in Management of Water Resources, Water Supply and Waste Disposal; and

Module V - Evaluation and Monitoring of WSS Programmes, Projects and the Role of Women.

The training modules were evaluated by representatives/ participants of countries with regard to:

1. The participants' professional interest in the particular topic included in the modular unit;
2. The clarity of objectives of the module;
3. The extent of achievement of the above objectives;
4. Whether or not the module is well structured;
5. The appropriateness of the terminologies (whether they are easy or difficult to understand) used in the module;
6. The clarity and usefulness of the audio-visual material (slides and transparencies) used in the module;
7. The completeness of the checklist for the module with respect to its coverage of the subject;
8. The usefulness, simplicity and sufficiency of the checklists being provided;
9. The ability to impart new knowledge by each module;
10. The usefulness of the knowledge gained from the module in their present work;
11. The usefulness of newly gained knowledge in the near future;
12. The comprehensiveness, depth and level of interest of the topics contained in each module;
13. The necessary improvements of a particular training module to increase its effectiveness and usefulness.

The present evaluation is based on the analysis of the completed questionnaires received from 18 participants (1 from Bangladesh, 3 from India, 1 from Malaysia, 2 from Pakistan, 2 from The People's Republic of China, 3 from the Philippines, and 6 from Thailand). These participants came from various fields of specialization, namely, water resources, natural resources and environment, education and training, health, women in development, social development, youth and community mobilization.

A. Evaluation of individual modules

1. Module I. The International Drinking Water Supply and Sanitation Decade (IDWSSD) and beyond

An analysis of the completed evaluation questionnaires by the workshop participants indicated that 71% of the participants had very high interest and 29% had high interest in Module I. As regards objectives, 82% considered that the objectives of the module were very clear, 12% considered they were clear, and 6% considered they were not clear. Some of the participants (52%) felt that the objectives of the module met all their expectations, while others (48%) felt that only some of their expectations were being met.

All participants considered that the module met most, if not all the objectives concerning policies that need to be adopted or amended which have direct impact on women, water supply and sanitation projects as well as those concerning human resources development, particularly with regard to rural women. As regards the contents of the module, 78% thought that they were extremely well structured and 22% thought they were well structured. With regard to the terminology used in the module, 72% thought that it was very easy to understand and 28% thought it to be easy.

In assessing the clarity and usefulness of the visual material (slides and transparencies) used during the presentation of the module, 83% thought that they were very clear and very useful and 17% thought they were clear and useful.

Regarding the completeness of the checklist in covering the subjects in Module I, 50% thought that it was very complete and 50% thought it was complete. Concerning the usefulness, simplicity and sufficiency of the checklist, 56% thought it was extremely useful, simple and sufficient, 38% thought it was useful, simple and sufficient, and 6% thought that it was not useful, simple or sufficient.

With regard to enhancing the knowledge of the participants, 48% thought they learned many new things from the module, 35% thought they learned some new things, and 17% thought they learned nothing new. In addition, 58% thought that the knowledge acquired through the module was very useful, 29% thought it was useful to some extent, and 13% thought that little or no knowledge was aquired.

Among the list of topics which participants would like to have treated more extensively in Module I are:

1. Relevance of women's participation in water supply and sanitation (WSS) projects;
2. Possible solutions to enhance women's role in water supply and sanitation projects;
3. More initiatives taken up during the decade;
4. Other successful projects;
5. How to protect the future;
6. Plans and actions for the 1990's;
7. Efforts of the UN to ensure the involvement of women in water supply and sanitation in societies where segregation is practiced;

8. Programs which teach women how to maintain the instruments for WSS;
9. Methodology to encourage more women to participate in WSS programs;
10. Progress made since 1991 workshop;
11. Projections of potential problems in the future of water supply and sanitation;
12. Testing modules in urban areas.

One participant from India would like to have the topic about the "Role of various donor organizations in past" treated to a lesser extent. Another participant from the same country would like to have the topic on "The introduction to the whole global resolution" treated to a lesser extent. A participant from Thailand believed that the "broad view of women's roles in places where realistic situations could not be achieved" was given less emphasis.

Topics of particular interest to participants but not contained in Module I include:

1. More information pertaining to INSTRAW's work;
2. Involvement of women through their manfolk at the community level;
3. The role of technical colleges in WSS
4. Appropriate technology for countries that need to preserve safe drinking water in rural areas;
5. Perspectives from different countries.

Suggestions for improvement of Module I include:

1. Allow more time for floor participation;
2. Trainer's explanations need to be clearer and livelier;
3. Experts in the field should share their experiences with others;
4. Include background materials for discussion regarding areas that need external help;
5. Identify coordinating structures that have been established;
6. Clearer visual slides;
7. Expand treatment on the impacts of WSS on women and their countries;
8. Place less emphasis on historical aspects.

2. Module II. Participation of women in planning, choice of technology and implementation of water supply and sanitation projects

In evaluating the level of interest in Module II, 61% of the participants indicated very high interest and 39% indicated high interest in the module. As regards objectives, 78% felt that the objectives of the module were very clear and 22% felt they were clear. Most of the participants (60%) considered that the objectives of the module met all their expectations, while 40% considered that only some of their expectations were being met.

As regards the contents of the module 58% thought that they were extremely well structured and 48% thought they were well structured. With regard to the terminology used in the module, 67% thought that it was very easy to understand and 33% thought it to be easy.

In assessing the clarity and usefulness of the audio-visual material

(slides and transparencies) used in the module, 56% thought that they were very clear and very useful and 44% thought they were clear and useful.

Regarding the completeness of the checklist in covering the subjects in Module II, 56% thought that it was very complete, 39% thought it was complete, and 5% thought it was not complete. Concerning the usefulness, simplicity and sufficiency of the checklist, 59% thought it was extremely useful, simple and sufficient, 35% thought was just useful, simple and sufficient and 6% thought it was useless.

With regard to enhancing the knowledge of the participants, 50% thought they learned many new things, 44% thought they learned some new things, and 6% thought they learned nothing new. In addition, 56% thought that the knowledge acquired through the module was very useful and 44% thought it was useful to some extent.

Among the list of topics which participants would like to have treated more extensively in Module II are:

1. Potential for women's participation in water supply and sanitation (WSS) projects;
2. Social constraints for women's participation in WSS projects - attitude, tradition and customs;
3. Testing of modules in urban areas;
4. Discussion of projects carried out in various countries;
5. Constraints concerning women with regard to their capability for undertaking construction work;
6. Participation of international leaders in financial and developmental programmes dealing with WSS programmes;
7. Promote women's involvement in the planning process, selection of technology, and implementation of WSS projects in developing countries;
8. Specify ways and means of overcoming cultural and/or religious barriers in various countries;

Topics of particular interest to participants but which were not contained in Module II include:

1. List of UN agencies that provide funds for WSS projects;
2. Description of the type of women that would make WSS projects more effective;
3. Issues relating to women in countries that segregate men and women;
4. Documents should contain more information pertaining to the countries participating in the workshop;
5. Additional information on urban areas should be provided;
6. Specific design criteria for different pumps which cater to women's needs;

Suggestions for improvement of Module II include:

1. To include presentations by people who have been actually involved in WSS projects;
2. Failures and pitfalls should also be documented, so that one can have

an idea of what not to do;

3. Speakers should understand ground realities rather than technical information;
4. Some case studies should cover urban settlements as well;
5. Promote more confidence in women's capabilities;
6. Organize women more effectively, especially the ones who are illiterate;
7. Encourage greater women's participation in skill developement;
8. Recommended policies, approaches, and requirements for women's involvement in development should be discussed more thoroughly;
9. Holding increased number of group and floor discussions;
10. Speakers should be more charismatic;
11. More audio-visual aids should be developed portraying applications of things discussed for the module;
12. Resource persons should give brief ideas about the social setting of each respective country, then assess them through a representative of the country, in order to enhance mutual understanding.

3. Module III. Role of women in hygiene education and training activities for water supply and sanitation projects

In assessing the level of interest in Module III, 88% of the participants indicated very high interest and 12% indicated high interest. As regards objectives, 88% thought that the objectives of the module were very clear and 12% thought they were clear. Most of the participants, that is, 85% said that the objectives of the module met all their expectations, while 15% said that only some of their expectations were being met.

As regards the contents of the module 88% thought that they were extremely well structured and 12% thought they were well structured. With regard to the terminology used in the module, 87% thought that it was very easy to understand and 13% thought it to be easy.

In assessing the clarity and usefulness of the visual material (slides and transparencies) used in the module, 94% thought that they were very clear and very useful and 6% thought they were clear and useful.

Regarding the completeness of the checklist in covering the subjects in Module III, 82% thought that it was very complete, 12% thought it was complete, and 6% thought it was not complete. Concerning the usefulness, simplicity and sufficiency of the checklist, 65% thought it was extremely useful, simple and sufficient, 29% thought it was useful, simple, and sufficent, and 6% thought it was useless.

With regard to enhancing the knowledge of the participants, 58% thought they learned many new things, 35% thought they learned some new things and 6% thought they learned nothing new. In addition, 56% thought that the knowledge acquired through the module was very useful, and 44% thought it was useful to some extent.

Among the list of topics which participants would like to have treated more extensively in Module III are:

1. Training areas related to WSS projects in which women can be more actively involved;
2. Case studies of both successful and unsuccessful training programmes pertaining to WSS projects;
3. Methods for increasing awareness and promotion of personal hygiene;
4. Some references with regard to voluntary efforts and urban settlements should be included;
5. Women's involvement in maintaining pipes should be discussed;
6. Technical aspects of various types of WSS systems should be included;
7. Training of project staff on how to promote women's involvement in WSS projects should be discussed;
8. Role of women in training activities where men and women are segregated;
9. Training illiterate women by other women in developing societies;
10. Arranging follow-up training activities for greater involvement of women in WSS programmes;
11. The role of governments role in involving women in hygiene education and training;
12. Detailed evaluations of programmes on women's participation.

Topics of particular interest to participants but not contained in Module III include:

1. The economics and financing of sustainable training programmes for women's participation in WSS projects;
2. The role of NGOs in water demand management;
3. Government organizations' supporting role in enhancing women's role and participation;
4. Approaches to involving men in women's development programmes;
5. Social marketing techniques;
6. Cooperation between men and women to share activities concerning WSS projects;

Suggestions for improvement of Module III include:

1. Provide in-depth training to participants involving hands-on exercises to ensure that they become competent trainers;
2. Present and discuss the case studies wherever possible;
3. Include a topic on management training;
4. Elaboration of training guides;
5. Further explanation on the operation and maintenance of pumps;
6. More group discussions should be held;
7. Encourage more female participation and/or support in WSS projects;
8. More case studies should be provided with slides showing the involvement of women;
9. Refresher courses for trained personnel at national and local levels should be conducted;
10. Greater emphasis should be placed on hygiene.

4. Module IV. Participation of women in management of water resources, water supply and waste disposal

An analysis of the completed questionnaire returns indicated that 78% of the participants had very high level of interest and 22% had high interest in Module IV. As regards objectives, 67% thought that the objectives of the module were very clear and 33% thought they were clear. Some of the participants (67%) said that the objectives of the module met all their expectations, while 33% said that only some of their expectations were being met.

As regards the structure of the module, 67% thought that they were extremely well structured and 33% thought they were well structured. With regard to the terminology used in the module, 67% thought that it was very easy to understand and another 33% thought it to be easy.

In assessing the clarity and usefulness of the visual material (slides and transparencies) used in the module, 67% thought that they were very clear and very useful and 33% thought that they were clear and useful.

Regarding the completeness of the checklist in covering the subjects in Module IV, 67% thought that it was very complete and 33% thought it was complete. Concerning the usefulness, simplicity and sufficiency of the checklist, 67% thought it was extremely useful, simple and sufficient, 28% thought it was useful, simple and sufficient to some extent, and 5% thought it was not useful, simple or sufficient.

With regard to enhancing the knowledge of the participants, 42% thought they learned many new things from the module, 52% thought they learned some new things and 6% thought they did not learn anything new. In addition, 56% thought that the knowledge acquired through the module was very useful and 44% thought it was useful to some extent.

Among the list of topics which participants would like to have treated more extensively in Module IV are:

1. Requirements for sustainability and environmental protection;
2. Water quality management, its nature and purpose;
3. Funding programmes in poor areas;
4. Role of women's pressure groups on government in the promotion of WSS programmes;
5. Artificial contamination;
6. Environmental control;
7. Extended workshops involving WSS programmes and women's participation;
8. Governments' role in promoting women's development programmes;
9. Water conservation methods;
10. Management of water quality and related technology.

Topics of particular interest to participants but not contained in Module IV include:

1. Management of water quality;

2. Nature and purpose of water demand management;
3. Integrated approach to involvement of women in WSS programmes;
4. Technology to recycle wastewater to become usable water in developing countries.

Suggestions for improvement of Module IV include:

1. More attention to be given to management of rural water resources rather than urban or peri-urban resources; and
2. More emphasis on water quality management in Module IV was requested by almost all participants.
3. More floor discussions were requested to gain a clearer understanding of the module and programme;
4. More illustrations were requested on the water recycling technology;
5. Field visits to water resources management projects were requested to gain a first hand knowledge and exchange of experience and views on the subject;
6. Promoting awareness of the need to involve more women in this field.

5. Module V. Evaluation and monitoring of water supply and sanitation programmes, projects and the role of women

An evaluation based on completed questionnaire returns indicated that all participants had shown very high interest. As regards objectives, 89% thought that the objectives of the module were very clear and 11% thought they were clear. Almost all the participants (93%) felt that the objectives of the module met all their expectations, while just a few (7%) felt that only some of their expectations were being met.

As regards the structure of the module, 89% thought that they were extremely well structured and 11% thought they were well structured. With regard to the terminology used in the module, 83% thought that it was very easy to understand and 17% thought it to be easy.

In assessing the clarity and usefulness of the visual material (slides and transparencies) used in the module, 83% thought that they were very clear and very useful, 11% thought they were clear and useful and 6% thought that they were not useful.

Regarding the completeness of the checklist in covering the subjects in Module V, 83% thought that it was very complete, 11% thought it was complete, and 6% thought it was not complete. Concerning the usefulness, simplicity and sufficiency of the checklist, 67% thought it was extremely useful, simple and sufficient, 28% thought it was useful, simple and sufficient and 5% thought it was not useful, simple or sufficient.

With regard to enhancing the knowledge of the participants, 78% thought they learned many new things from the module and 22% thought they learned some new things. In addition, 94% thought that the knowledge acquired through the module was very useful and 6% thought it was useful to some extent.

Among the list of topics which participants would like to have treated more

extensively in Module V are:

1. Evaluation of project replicability;
2. Evaluation of project sustainability and the role of women;
3. Feed back systems and its advantages;
4. Community monitoring systems;
5. Participatory evaluations;
6. Health effects: benefits or impacts of the programme.

Topics of particular interest to participants but not contained in Module V include:

1. Evaluation of benefits to women resulting from their involvement in WSS projects;
2. Evaluation of the relationship between project sustainability and increased women's involvement in WSS projects;
3. Problems which occurred during evaluations;
4. How to evaluate the participation of the community in environmental impact assessment.

Suggestions for improvement of Module V include:

1. Providing step-by-step explanation of well proven methodologies for monitoring and evaluation of WSS projects;
2. More case studies on the application of concepts being discussed;
3. Application of techniques for participatory evaluation;
4. Share the results of the workshop with all participants.

B. Overall evaluation of training modules

The usefulness and effectiveness of the training modules were evaluated based on the following indicators:

1. Level of interest shown by participants;
2. Relevance of objectives with regard to training needs;
3. Quality of content and structures of training modules;
4. Effectiveness of training modules as a media in imparting knowledge and experience; and
5. Clarity and understandability of the training material.

1. Level of interest

An analysis of the completed questionnaire returns indicated that over 61% of the participants had very high interest in all the modules, while the remaining indicated high interest. In general, all participants of the workshop showed keen interest in all the five modules as can be judged from a large number of innovative and useful suggestions proposed by them to improve the effectiveness of the training modules.

2. Relevance of objectives with regard to training needs

The views of participants with respect to the level of fulfillment of their expectations by the objectives of the modules are summarized below.

Extent to which expectations are being fulfilled
(Figures indicate % of participants)

	All expectations	Some expectations
Module I	52	48
Module II	60	40
Module III	85	15
Module IV	67	33
Module V	93	7

It will be observed from the above that all expectations were being met by Modules III, IV and V for more than 67% of the participants, while Modules I and II could meet all expectations for approximately 57% of the participants. The relatively lower level of fulfillment of expectations by Module I is mainly due to the difference in the social and cultural backgrounds of the participants with regard to their capability to understand the lectures and illustrations. The reason for the low level of fulfilment of expectations by Module II is different from that of Module I. The technical nature of the subject dealt with in Module II (both in the fields of water supply and sanitation) requires a fairly sound knowledge of basic principles in those fields to obtain full benefits from this module. Participants who are trainers, doctors, social workers and administrators therefore have some difficulty understanding Module II. Moreover, the terminologies of water supply and sanitation are rather new to those participants who are not from those fields. However, it would be rather difficult or even impossible to further simplify the material contained in Module II if the effectiveness of the module in imparting the knowledge and experience in this field were to be maintained. Allocation of more time for the demonstration of the module and pursuing discussions would also help in solving the problem. In general, most participants thought that all their expectations were being met by the modules despite minor reservations expressed by some of them.

3. Quality of content and structure of training modules

The usefulness of the contents of the modules to their respective professions were rated by the participants as follows:

Percentages of participants (%)

	Very useful	Useful	Not useful
Module I	58	29	13
Module II	56	44	--
Module III	56	44	--
Module IV	56	44	--
Module V	94	6	--

contained in Module I, II, III, IV and V as useful or very useful. Only 13% of the participants thought that Module I was not useful.

The assessment of the structure of the modules with regard to their ease of use is given below:

Percentages of participants (%)

	Very good	Good	Bad
Module I	78	22	--
Module II	58	42	--
Module III	88	12	--
Module IV	67	33	--
Module V	89	11	--

From the above analysis, it will be seen that all the participants considered the structure of the modules as good or very good.

Therefore, it can be concluded that the contents and structure of the modules are of high quality.

4. Effectiveness of training modules

The effectiveness of the modules was evaluated with regard to their ability to impart new knowledge and experience to participants. The participants' evaluation of the training modules in this regard is summarized below.

Amount of knowledge imparted
(Figures indicate % of participants)

	Many new things	Some new things	Nothing new
Module I	48	35	17
Module II	50	44	6
Module III	58	35	7
Module IV	42	52	6
Module V	78	22	--

It can be seen from above that more than 83% of the participants considered that they learned new things from the training modules. In this regard, Module V appeared to be most effective in imparting new knowledge as all the participants acknowledged to that effect. As regards the remaining modules, 17% said that they learned nothing new from Module I, 6% said they learned nothing new from Modules II and IV, and 7% said they learned nothing new from Module III.

5. Clarity and understandability of the modules

The participants' evaluation of the understandability of the training modules is given below.

	Percentage of participants (%)		
	Very easy	Easy	Difficult
Module I	72	28	--
Module II	67	33	--
Module III	87	13	--
Module IV	72	28	--
Module V	83	17	--

The ratings given by the participants on the clarity and usefulness of audio-visual material used during the workshop are as follows.

	Percentage of participants (%)		
	Very clear/useful	Clear/useful	Confused/useless
Module I	83	17	--
Module II	56	44	--
Module III	94	6	--
Module IV	72	28	--
Module V	83	11	6

From the above analysis, it can be concluded that almost all the participants found the modules to be clear, easily understandable and useful. Only 6% of the participants have some reservations with the audio-visual material used in Module V.

In conclusion, an overwhelming majority of the participants rated the training modules on women, water supply, and sanitation as very useful and effective, and to stress this point, all indicated that they would use the modules in future national training courses to be organized in the field of water supply and sanitation in their respective countries. The usefulness and effectiveness of the training modules may be enhanced by reviewing and updating their contents on a periodic basis, taking into consideration the suggestions made by participants at various workshops and training courses. It would also be helpful to use resource persons with adequate technical background and experience in the field of water supply and sanitation for presenting the modules and for leading discussions, particularly with regard to those modules that deal with technical matters in some depth.

Participants' responses also showed that the preparation or training of women and women's groups in the field of water supply and sanitation is as important as training of decision makers, senior officials, engineers and trainers for effective promotion of women's roles and their increased participation in water supply and sanitation projects.

Annex I

LIST OF PARTICIPANTS

BANGLADESH

Mr. Md. Khoda Bux, Assistant Chief Engineer, Department of Public Health Engineering (DHPE), Dhaka

CHINA

Ms. Li Qiu Juan, Physician in charge, Jiangzi Province Sanitation and Anti-epidemic Station, Provincial Government Court, Nan Chang, Jiangxi

Mr. Jiang Hua, Project Officer, Jiangxi Provincial Department of Foreign Economic Relations and Trade (FERT), Nan Chang, Jiangxi

INDIA

Ms. Indrani Sen, Joint Secretary, Ministry of Urban Development, Government of India, New Delhi

Ms. Uma Pillai, Joint Secretary, Department of Women and Child Development, Ministry of Human Resources Development, New Delhi

Ms. Hira Sharma, Superintending Engineer and Manager of Monitoring, India Water Corporation, Up Jal Nigam, Lucknow U.P.

MALAYSIA

Ms. Salmah Zakaria, Senior Engineer, Drainage and Irrigation Department, Kuala Lumpur

PAKISTAN

Mr. Abdul Hameed Haqshbandi, Joint Secretary, Ministry of Local Government and Rural Development, Islamabad

Ms. Riffat Afzaal Zaidi, Assistant Chief, Women's Project Cell, Planning and Development Department, Government of the Punjab, Lahore

PHILIPPINES

Ms. Rebecca M. Ducusin, Principal Engineer B, Local Water Utilities Administration, Quezon City

Mr. Rodolfo S. Feraren, Project Director, Department of the Interior and Local Government, Quezon City

Ms. Rosa S. Lorredo, Chief, Industrial Relations Development, Local Water Utilities Administration, Quezon City

THAILAND

Mr. Sathaporn Rojrattanapol, Administrative Technical Officer, Technical Service and Planning Division, Department of Local Administration, Ministry of Interior, Bangkok

Ms. Sonthaya Sinthuyont, Director, External Training and Special Activities Division, Human Resources Development Office, Metropolitan Waterworks Authority, Ministry of Interior, Bangkok

Mr. Rutr Klomchum, Director, Nongkhai Technical College, Department of Vocational Education, Ministry of Education, Bangkok

Mr. Eakchai Paranan, Sanitary Technical Officer, Sanitation Division, Department of Health, Ministry of Public Health, Bangkok

Ms. Somkid Buapeng, Senior Hydrogeologist, Groundwater Division, Department of Mineral Resources, Ministry of Industry, Bangkok

Mr. Wilas Techo, Manager, Operation Division, Population and Community Development Association, Bangkok

Ms. Malinee Chuylavachana, Secretary to the Standing Committee on Environment, The National Council of Women of Thailand, Division of Environmental Health, Department of Health, Ministry of Public Health, Bangkok

Ms. Siriwan Chandanachulaka, Member, The National Council of Women of Thailand, Division of Environmental Health, Department of Health, Ministry of Public Health, Bangkok

UNITED NATIONS SECRETARIAT

Department of Economic and Social Development (DESD)	Ms. Margaret Howard, Economic Affairs Officer, Office of the Director, Science, Technology, Energy, Environment and Natural Resources Division, DESD United Nations, New York
International Research and Training Institute for the Advancement of Women (INSTRAW)	Ms. Borjana Bulajich, Social Affairs Officer, INSTRAW Santo Domingo, Dominican Republic

UNITED NATIONS BODIES

United Nations Children's Fund (UNICEF)	Mr. K.B. Kothari, Senior Regional Planning Officer, UNICEF, Bangkok
United Nations Development Programme (UNDP)	Ms. Ricarda Rieger, Programme Officer, UNDP, Bangkok
United Nations Development Fund for Women (UNIFEM)	Ms. Atsuko Miwa, Programme Officer UNIFEM Regional Office for Asia and the Pacific

SPECIALIZED AGENCIES

Food and Agriculture Organization of the United Nations (FAO)	Ms. Alexandra Stephens, Regional Sociologist and Women in Development Officer, FAO Regional Office for Asia and the Pacific, Bangkok
World Health Organization (WHO)	Dr. U Han Tun, WHO Liaison Officer with ESCAP, WHO, Bangkok

OTHER ORGANIZATION

Asian Institute of Technology (AIT)	Dr. Govind Kelkar, Coordinator, Gender and Development Studies Unit, Human Settlements Division, AIT, Bangkok

RESOURCE PERSONS

Dr. Bilqis Amin Hoque, Coordinator, Environmental Health Sciences, International Centre for Diarrhoeal Disease (ICDDR), Dhaka, Bangladesh

Ms. Nitaya Mahabhol, Extra-ordinary Specialist in Public Health Engineering, Ministry of Public Health, Bangkok, Thailand

Ms. Aminata Traore, Abidjan Human Resources Development Specialist, Abidjan, Ivory Coast

Mr. Peder Hjorth, Associate Professor, Division of Water Resources Engineering, AIT, Bangkok, Thailand

OBSERVER

Mr. Mohd Saleh Bin Yahaya, Lecturer, University of Technology, Kuala Lumpur, Malaysia

SECRETARIAT

Mr. Rafeeuddin Ahmed	Executive Secretary
Ms. S. Takahashi	Deputy Executive Secretary
Mr. Kazi Rahman	Special Assistant to the Executive Secretary, and Secretary of the Commission
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Mr. Guangchang Shi	Chief, Natural Resources Division
Mr. Cengiz Ertuna	Chief, Water Resources Section Natural Resources Division
Ms. Marcia Brewster	Economic Affairs Officer, Water Resources Section, Natural Resources Division
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Ms. Susan Rose	Social Affairs Officer, Women in Development Section, Social Development Division
Ms. Hiroko Hashimoto	Social Affairs Officer, Women in Development Section, Social Development Division

Ms. Pari Soltan-Mohammadi	Chief, Programme Coordination and Monitoring Office
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Mr. Colin S. McGregor	Chief, Division of Administration
Mr. Hunter H.T. Chiang	Chief, Conference and General Services Section, Division of Administration
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Mr. Tim Sharp	Information Officer United Nations Information Service

Annex II

OPENING STATEMENTS

A. Mr. Rafeeuddin Ahmed, Executive Secretary Economic and Social Commission for Asia and the Pacific

Distinguished participants, Ladies and Gentlemen,

It gives me great pleasure to welcome you to the Workshop on Testing of Training Modules on Women, Water Supply and Sanitation. The Workshop represents a joint effort of the Economic and Social Commission for Asia and the Pacific (ESCAP), the United Nations Department of Economic and Social Development (DESD) and the United Nations International Research and Training Institute for the Advancement of Women (INSTRAW).

The Economic Commission for Asia and the Far East, ESCAP's predecessor, had recognized since its inception in 1947 the importance of water resources to development in the region, having as one of its earliest units the Bureau of Flood Control and Water Resources Development. The Commission has had a long history of providing technical assistance in the water resources field. In recent years ESCAP has also focused on the social aspects of development, including the importance of community participation and the role of women in water resources development. In fact, the present workshop is a follow-up to an earlier training seminar held in Bangkok in 1989 testing the original versions of the training modules on women, water supply and sanitation. We feel the revised modules are considerably improved versions which will elicit lively and enthusiastic discussions during the Workshop.

These modules comprise five multi-media training packages which were originally developed by INSTRAW and the International Labour Organisation's Training Centre at Turin, Italy, and were revised in 1991 by the DESD.

It is most gratifying that the United Nations agencies have cooperated to develop these training materials, which emphasize the crucial role that women have to play in developing and managing water resources and sanitation facilities, and the importance of those facilities to the improvement of the quality of life of women and their families.

During the Workshop, it is hoped that participants will be able to appreciate fully the advantages of involving women effectively in water supply and sanitation programmes and to pass that enhanced awareness on to key target groups in water supply and health agencies in their own countries and the region.

The region covered by ESCAP, the most populous and economically vibrant region in the world, was also the most successful developing region in terms of improving access to water supply and sanitation services during the International Drinking Water Supply and Sanitation Decade from 1981 to 1990. According to the World Health Organization's estimates, out of approximately 1.35 million people globally who gained access to adequate water supply services during the Decade,

over one billion were living in Asia and the Pacific. Of these, about 900 million were in rural areas. The rapid increases in service coverage in Asia and the Pacific were the result of a real commitment to the goals of the Decade by the governments of large countries such as India and China, including adequate budgetary allocations. The region's success was also due to innovative approaches applied towards provision of water supply, involving community participation and realistic cost recovery strategies. Despite many successes, however, it was estimated that 30 per cent of the population of the Asia and Pacific region still did not have access to safe water in 1990. What will be needed to achieve more rapid rates of service expansion in both rural and urban areas is the commitment of the users - to take responsibility for and maintain small systems and to pay for their maintenance. In general, users are women, and it is in their interest to ensure that the system is reliable and functioning.

The opportunity provided by this Workshop to share national and international experiences in Thailand, is, I feel, noteworthy. The Thai people have been recognized in much of the development literature as being leaders in many areas, such as in evolving community participation strategies which involve women, and producing innovative solutions to water supply problems in rural areas, with good records on cost recovery and sustainable use. In this Workshop, we will be benefitting from the experiences gained in Thailand on women's role in water resources development and management.

I am confident that this Workshop can have a significant impact on the way these training packages are used throughout the world. It is up to the participants to make a frank assessment of the usefulness and replicability of these training packages. Your comments in discussion sessions and working groups will be extremely valuable for us in further dissemination of these training materials. The fruitful exchange of views and experiences will provide new ideas to guide both the work of the United Nations as well as the work of national-level agencies in the region.

I wish you every success in your deliberations.

B. Ms. Dunja Pastizzi-Ferencic, Director
Science, Technology, Energy, Environment and
Natural Resources Division, and
Chairperson, Task Force on Women in Development
United Nations Department of Economic and Social Development

Mr. Executive Secretary, distinguished participants, ladies and gentlemen,

It is my great pleasure, on behalf of the Task Force on Women in Development of the United Nations Department of Economic and Social Development, and on my own behalf, to welcome you to this Workshop on Testing of Training Modules on Women, Water Supply and Sanitation. I would like to pay particular tribute to the Executive Secretary of the Economic and Social Commission for Asia and the Pacific, and to staff of ESCAP's Natural Resources Division, for their very active and productive role in preparing for, and hosting this meeting, which would certainly not have been possible without ESCAP's involvement and support, and to all participants from Thailand and elsewhere, for convening here to share your experiences and perceptions with us. We are also indebted to the United Nations International Research and Training Institute for the Advancement of Women, better known to many of you as INSTRAW, for its efforts, in close cooperation with DESD, in developing this training package and for joining us here in Bangkok to present it and discuss it with you.

We are especially pleased that this Workshop is unfolding in Thailand, a country which has long demonstrated its strong commitment to the goals of the United Nations, and to strengthening the role of women in sustainable development.

I believe it may be useful to take a moment to explain the functions of the Department of Economic and Social Development, a co-organizer of this meeting, and to try to place this meeting within the framework of our activities. May I say at this point, that the holding of this Workshop is particularly significant for us, as it represents a truly collaborative effort on the part of four important United Nations organizations - ESCAP, INSTRAW, DESD and ILO - which hold a number of important concerns and objectives in common. I believe that such cooperation is essential if activities in support of sustainable development are to be successful.

Since our last such workshop, which we held in The Gambia, in Africa almost exactly one year ago, a major restructuring of the economic and social sectors of the United Nations Secretariat was undertaken, resulting in the merger of five previously separate entities within the United Nations dealing with economic and social issues. In announcing the formation of this newly restructured Department, DESD, the Secretary-General stated that by consolidating the relevant substantive and technical capabilties in the social and economic fields, the goal was to "maximize the impact of the Organization's work". Thus the role of DESD is to make the United Nations more effective and responsive in addressing the priorities and meeting the needs of Member States, especially those of developing countries in the economic and social sectors, with a particular emphasis on sustainable development.

The three main functions of the Department's work are to achieve coordination and guidance throughout the UN system in the economic and social sectors; undertake research, analysis and studies on important global economic and social issues, and to undertake technical cooperation activities for developing countries, including short-term advisory services.

In so far as technical cooperation activities are concerned, our multisectoral activities encompasses the fields of water, mineral and energy resources, physical infrastructure and transport, development planning, statistics, public administration and finance, population and social development.

Our activities in the water resources sector aim to assist countries in developing and managing their water resources in a sustainable, environmentally sound manner, which will safeguard future supplies. Thus our overall programme entails four main areas of work - first, that of finding and developing water resources, involving well digging and drilling in rural areas, installing handpumps, and training local communities in sanitation and simple maintenance, with a particular focus on women who are most actively involved in water, sanitation and health issues. Second, that of providing assistance in the planning and management of existing water supplies, where we have been most active in this region. Third, that of protecting water supplies for future generations, through assistance in formulating laws and pricing policies, which will encourage efficient water development and minimize water loss. Finally, and perhaps most important, a key element in our work is that of human resources development and capacity-building, which we are trying to achieve through seminars and workshops on all aspects of water use and management. This Workshop is one example of this area of our work.

Our Task Force on Women in Development, which was established in 1982 and is the oldest such entity in the UN system, has endured and grown throughout the restructuring process, and has continued in its efforts to promote the involvement of women in the development process. We believe that this can only be achieved by focusing fully on the need to involve women in the planning and implementation stage of development projects, particularly at the country level, to ensure that programmes in which DESD cooperates with developing countries, will fully incorporate women's concerns. However, we believe that since project identification is based upon the main objectives and priorities of individual governments, the role of women will be reflected only to the extent that governments are willing to consider the issue of women in development as relevant or applicable.

Our Workshop here in Thailand, together with the previous meeting in The Gambia, were conceived largely at the initiative of our Task Force on Women and of our Science, Technology, Energy, Environment and Natural Resources Division - a division with a long name and a broad mandate. It comes at a critical juncture - following after the Earth Summit in Rio and prior to the Fourth World Women's Conference which will be held in the ESCAP region, in Beijing, in 1995. I and my colleague from INSTRAW have just come from Beijing, where our respective organizations organized, together with the Chinese State Science and Technology Commission and the All-China Women's Federation, an international conference on the role of women in environmentally sound and sustainable development, at which a number of international organizations, including ESCAP, were represented,

together with participants from developing countries, governmental and non-governmental organizations. The purpose of that meeting, an effort collectively conceived by our DESD WID Task Force, was to try to translate some of the concepts enunciated at UNCED into action by developing concrete, replicable projects and programmes, which would ensure that the role of women, including their environmental needs, experience and perceptions, are fully incorporated into the design and implementation of policies and programmes related to environment and sustainable development, in a wide range of substantive sectors, for financing by donors and eventual execution. We should pay tribute to UNCED and to Agenda 21 for directing as much attention as it did to issues relating to women. There are, nevertheless, gaps still to be filled and a number of significant goals still to be reached. At our meeting in China, we were attempting to build upon and expand what was started at UNCED.

This Workshop here in Bangkok is also another small step along the road from Rio into the future, and from it we hope to ascertain the answers to four basic questions: what advantages can be derived from women's participation in water supply and sanitation programmes? What training methodologies should be used? How can women become more directly involved? And how can we best approach, train and support women in designing, implementing and evaluating water supply and sanitation programmes. We very much look forward to discussing these issues with you, and to learning of your own views, ideas and experiences.

I would like to conclude on a personal note. During a recent sight-seeing tour of this beautiful city, we were informed by our guide that in bygone days, Thai women used to stand beside the men in doing battle against invading enemies. I admire this concept of partnership and would like to translate it into a different context. I would like to see women, in partnership with men, as equal and active participants in a battle of a different kind - the battle against poverty, and against environmental degradation which comes as a result of poverty.

I wish for the world a positive, productive and enduring outcome.

C. Ms. Margaret Shields, Director
United Nations International Research and Training Institute for the Advancement of Women

Distinguished participants, Ladies and Gentlemen,

It is a great pleasure and privilege to address you today at the opening of the Interregional Training Workshop on Women, Water Supply and Sanitation.

Allow me first to express my heartfelt gratitude to both the Economic and Social Commission for Asia and the Pacific (ESCAP) and the Department of Economic and Social Development (DESD) for co-organizing this workshop. This is an excellent example of close co-operation between UN agencies and bodies. It is the second time INSTRAW and ESCAP are conducting a training workshop on "Women, Water Supply and Sanitation". The first workshop was held in January 1989 and proved to be most useful. This is also the second time that the Institute has organized a training workshop with DESD. An interregional workshop was recently held in Banjul, The Gambia. DESD also participated in the production of the training package which will be presented to you during the course of this week, and provided the financial support which enabled us to organize this workshop in Bangkok.

I am confident that the collaborative effort between DESD, ESCAP and INSTRAW will pave the way for joint implementation of other projects and programmes in the future.

In welcoming the experts present today, I would like to reiterate INSTRAW's appreciation to you for the long distances you have travelled in order to share with us your rich experience and to provide us with expert advice and guidance for future action. I would also like to welcome the representatives of the United Nations family who have come to work together on this important subject - women, water supply and sanitation.

Water covers about 70 per cent of the surface of the earth. Water is a prerequisite for survival of human beings and their development. Current and projected problems with freshwater resources arise from the pressure to meet the agricultural, human settlement, food and industrial needs of a fast-growing global population.

The statistics tell the story. In this decade, over one billion people in the developing world lack safe and adequate drinking water, while those lacking sanitation number almost two billion. Lack of a healthy environment and safe drinking water is the cause of some 13 million infant deaths every year in the developing world.

At the end of 1990, despite strenuous efforts to improve the situation, it is estimated that there will still be over one billion people in developing countries without access to adequate and safe water supply and almost two billion who have no access to appropriate means of sanitation.

The difficulty in closing the gap during the 1980s between those who

have and those who have not was due to the population increase, which amounted to around 750 million. This is a challenge to be faced again during the 1990s when the population increase is expected to reach almost 900 million. Those lacking water supply and sanitation constitute the group most at risk and suffering most severely from morbidity and mortality in developing parts of the world.

A holistic approach toward water resources, development and management is a prerequisite for the effective sustainable development of nations. It implies the development of human societies and economies and the protection of natural ecosystems on which the survival of humanity ultimately depends. This includes not only the need to look at the water cycle but also to intersectoral needs, ecological issues, alleviation of poverty and disease, sustainable rural and urban development and protection against natural disasters.

Women are the primary users, carriers, family educators and managers of water and thus they have a vested interest in securing safe drinking water and adequate sanitation. However, to date still not enough attention has been given to women as the primary human resource and the ultimate users of water. Their water-related work is taken for granted and denied an economic and social value. Women are often excluded from the planning and implementation of water supply and sanitation projects. Usually, such projects lack elements of communication and information on women and the relation between water, sanitation and health. Local women's customs, preferences and traditions are not considered in choosing the technical design and location of many projects.

I would like to bring to your attention that since 1982, INSTRAW has given priority to addressing these problems women face in the developmental area of water supply and sanitation. During the past decade, INSTRAW has conducted a number of training seminars on this topic at regional and international levels.

It is only recently that the crucial role of women in the field of water supply and sanitation has begun to be understood or acknowledged. The United Nations International Drinking Water Supply and Sanitation Decade has shown that by including women, water supply and sanitation projects can achieve their objectives more efficiently. Yet the extent and importance of women's involvement is too often unnoticed by policy-makers, planners and is too seldom taken into account.

Now, we are beginning to witness a change. During the International Conference on Water and the Environment, held in Dublin, Ireland, from 26-31 January 1992, participants called for fundamental new approaches to the assessment, development and management of freshwater resources including inmmediate investments, public awareness campaigns, legislative and institutional changes, technology development and capacity building programmes.

Four guiding principles were adopted during the Conference. Principle No. 3 is devoted to women, and it states that "Women play a central part in the provision, management and safeguarding of water". I might also add that

the holding of this Workshop at this time is of particular significance in light of the follow-up to the United Nations Conference on Enviroment and Development held in Rio de Janeiro from 3-14 June 1992, and in view of the linkage between women, environment and development in the context of water resources.

INSTRAW, in cooperation with DESD and the ILO Turin Centre, completed in June 1991 a training package on women, water supply and sanitation which will be used during this Workshop. The training package reflects INSTRAW's seven years of research and training of more than 300 participants in Africa, including a survey of materials, projects and activities undertaken in the field of water supply and sanitation both within and outside the United Nations system. The training package is based on a modular approach using participatory techniques. It is aimed at three different target groups: senior officials and development planners of ministries in charge of water supply and sanitation projects; representatives of non-governmental organizations, including women's organizations active in this developmental area; and trainers.

What this Workshop hopes to achieve is to demonstrate how women's involvement at all levels and stages of environmentally sound and sustainable water supply and sanitation programmes and projects can be made more effective, easier and more productive.

Specifically, the Workshop aims at: contributing to a new approach in the organization and management of sustainable water supply and sanitation programmes through the integration and consideration of women's needs; increasing awareness and sensitizing planners, officials, engineers, trainers and experts in charge of water supply and sanitation policies, programmes and projects for involving women in WSS planning, management and evaluation of programmes and projects; and creating a core group of facilitators trained to conduct similar workshops at local levels, thereby ensuring a multiplier effect.

I look forward to your active participation and hope you will share openly your experiences, problems and solutions.

In conclusion, I would like to say that I am confident that the outcome of this Workshop will be successful and hope that your experience here will prove useful to your countries in carrying out their activities in the field of women, water supply and sanitation.

Annex III

AGENDA

1. Opening of the session.

2. Election of officers.

3. Adoption of the agenda.

4. Overview of training methodology and workshop procedures

5. Technical session I: Presentation and discussion of training module I, The International Drinking Water Supply and Sanitation Decade and beyond.

6. Technical session II: Presentation and discussion of training module II, Participation of women in planning, choice of technology and implementation of sustainable water supply and sanitation projects.

7. Technical session III: Presentation and discussion of training module III, Role of women in hygiene education and training activities for water supply and sanitation.

8. Technical session IV: Presentation and discussion of training module IV, Participation of women in management of water resources, water supply and waste disposal.

9. Technical session V: Presentation and discussion of training module V, Evaluation and monitoring of water supply and sanitation programmes and the involvement of women.

10. Adoption of the report of the meeting and closing session.