

71  
CEFIG78



SEMINAR ON  
REGIONAL WATER  
MANAGEMENT  
9 - 12 JANUARY 1978

55522

# VOLUME 1

INFORMATION AND PRESENTATION  
DOCUMENTS

**C.E.F.I.G.R.E.**

CENTRE DE FORMATION INTERNATIONALE  
A LA GESTION DES RESSOURCES EN EAU

**I.T.C.W.R.M.**

INTERNATIONAL TRAINING CENTER  
FOR WATER RESOURCE MANAGEMENT

SOPHIA ANTIPOLIS BOITE POSTALE N° 13 06560 VALBONNE

71 CEF 1978-671 (1)

671  
71  
CEFIG 78

# VOLUME 1

## INFORMATION AND PRESENTATION DOCUMENTS

**BIBLIOTHEEK RIJKSINSTITUUT**

79133 VOOR 17 MEI 1979

**DRINKWATERVOORZIENING**

**LIBRARY**

International Reference Centre  
for Community Water Supply

- SUMMARY OF VOLUME 1 -

- COVERING LETTER BY THE CHAIRMAN  
SIR NORMAN ROWNTREE. PP. 5 - 8
  
- PREAMBLE DESCRIBING THE INTERNATIONAL  
TRAINING CENTRE FOR WATER RESOURCES  
MANAGEMENT. PP. 9 - 14
  
- CONTENTS OF THE WHOLE PUBLICATION PP. 15 - 31
  
- SECTION A : BRIEF EXPOSÉ OF THE ELEMENTS  
FOR MEDITATION AND THE PROPOSITIONS  
FORMULATED BY THE SEMINAR ON REGIONAL  
WATER MANAGEMENT. PP. 33 - 44
  
- SECTION F : ALPHABETICAL INDEX OF PARTICIPATION  
AND INTRODUCTORY DOCUMENTS. PP. 45 - 54

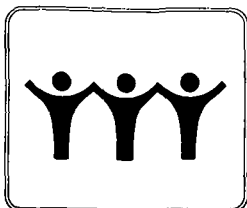
---

LIBRARY  
International Reference Centre  
for Community Water Supply



# COVERING LETTER





**C.E.F.I.G.R.E.**

**I.T.C.W.R.M.**

SOPHIA ANTIPOLIS  
BP 13 - 06560 VALBONNE - FRANCE

TEL : (93) 33 23 87

COVERING LETTER FROM  
THE CHAIRMAN

*Sir Norman ROWNTREE*

*Dear Sir or Madam*

*I have pleasure in sending to you the Proceedings forming the record of the I.T.C.W.R.M. Seminar on Water Management January 1978, which attracted 70 participants from nearly 40 countries as well as representatives from interested United Nations Agencies. They have discussed, considered and made proposals on subjects connected with water management and these are set out in the three volumes (I, II, III) which include six sections A to F.*

*The FIRST VOLUME consists of two parts :*

- Section A sets out the main conclusions of the seminar and will be of value to those people, interested in the subject, who were unable to be present at the meetings. It will also provide an overview of the proceedings for those who attended and contributed to the discussions. The booklet will provide, to a wider public, information on I.T.C.W.R.M. activities. A table of contents of the other sections B to F is included.*
- Section F comprises :*
  - . A list of participants*
  - . An alphabetical list of countries and of national and international organisations represented at the seminar.*
  - . A list of the documents submitted by I.T.C.W.R.M. at the opening session.*

*The SECOND VOLUME includes Sections B, C and D :*

- Section B records the keynote papers and discussions during the opening session.*

.../..

- Section C reports the proceedings in the "workshops" where every participant contributed from his knowledge and experience and show their confidence in the opportunity for training water resource managers. A selected bibliography is included.
- Section D contains the summary reports prepared by the four "workshops" as presented to the closing session.

The THIRD VOLUME consists of Section E :

- Section E records the lectures, communications and written contributions presented by participants. The lectures and the statement by Mr DA CUNHA are in both languages (French and English) and the remainder are presented in the original language version.

I hope you will find considerable interest in these publications and that you will send me in due course any comments which you wish to make.

With renewed thanks to all who have so far and will in the future find interest in this work, I remain,

Yours very sincerely

The Chairman  
Sir Norman ROWNTREE



PREAMBLE DESCRIBING  
THE INTERNATIONAL TRAINING CENTRE  
FOR WATER RESOURCES MANAGEMENT



## 1. HISTORY.

At the United Nations Environmental Conference in Nairobi about three years ago, those in attendance gave consideration to a number of real concerns expressed by the developing nations (Africa - Asia - Latin America) in the spheres of water resources evaluation, programming, mobilization and management.

It was in that context, thereafter heightened by the recommendations of the Mar del Plata Conference, that the idea arose and took shape of the organization of an agency serving the international community and providing assistance in training of water resources managers. That idea was then taken up jointly by the French Government and the U.N.E.P., the result being the establishment of the ITCWRM.

## 2. DEFINITION OF THE RESPONSIBILITIES.

It was first important to clarify the responsibilities and hence the terms.

### 2.1. TRAINING.

The ITCWRM has always had and still has its sights set on a role complementary to other training contributions. For this reason, there is no question at this time or in the future of the ITCWRM being substituted in areas already covered, especially in traditional training fields (engineering schools, universities).

### 2.2. WATER RESOURCES MANAGEMENT.

This concept of resource manager may be imperfectly understood :

- as being a summary hydraulic initiation to be given to a civil servant or planner concerned with water problems,
- as being a summary economic initiation to be given to an engineer specializing in water problems.

The ITCWRM has neither of those ends in view.

### 3. OBJECTIVES.

- 3.1. The first objective is for the ITCWRM to tap and summarize - particularly through seminars - the experience, investigations, requirements, ideas, suggestions and concerns of the most qualified representatives of the international community in water.
- 3.2. The ITCWRM's second objective is - based on its resources and under the broadest possible cooperative conditions (countries - trainees) - to sponsor training courses aimed not at disseminating "planning recipes" but at helping each requesting country to organize short or medium length meetings in which professionals would give in-depth study to a concrete case.
- 3.3. Such study and such scientific confrontation of specialists, assisted by a group of international class teachers and lecturers, will enable the professionals better to pinpoint the problems dealt with and to advance solutions therefor. The training course is thus essentially an operation which overlaps with experienced reality.

### 4. STRUCTURES AND ORGANIZATION.

As this publication goes to press, the ITCWRM has :

- 4.1. A permanent structure in Sophia-Antipolis (France) consisting of about 12 people responsible for designing, implementing and managing the training programs.
- 4.2. A board of directors which the person in charge of the permanent structure (Mr. VALIRON, Managing Director in charge of the ITCWRM's General Management) informs monthly of the progress of the ITCWRM's operations.
- 4.3. A Scientific Council which is the ITCWRM's conceptional, decisional and control body. Its very international make-up enables it to provide the ITCWRM with the most judicious and most critical guidelines.
- 4.4. A permanent sub-structure (outpost) at 17-21 Rue de Javel, Paris, which is primarily responsible for assisting the permanent structure

in areas in which certain practical facilities offered by a metropolitan region may make it possible to save considerable time.

## 5. THE RESOURCES.

- 5.1. The ITCWRM is financed jointly by the French Government (55 %) and by the U.N.E.P. (45 %).
- 5.2. From the legal standpoint, the ITCWRM is a French association the organization of which on September 21, 1976 was promulgated in the French Official Journal on November 5, 1976.
- 5.3. The ITCWRM has temporary premises in Sophia-Antipolis, and in the near future will have permanent facilities. It also has offices for the permanent sub-structure in Paris.

## 6. PROGRAMS AND ACTIVITIES.

### 6.1. ACTIVITIES.

Since May 1977, the ITCWRM - in addition to the regular meetings of its board of directors - has sponsored :

611. A meeting of the Scientific Council in May 1977.
612. A Mediterranean seminar in Le Tholonet (November 1977).
613. A Regional Water Management seminar (see publication).
614. A Scientific Council session following the seminar mentioned in 613 (January 1978).
615. Participation as co-sponsor in a seminar of Mediterranean experts (April 1978 - BLUE PLAN).
616. A seminar on Acquisition and Management of helpful Data (May 1978).

### 6.2. PROGRAMS.

The range of programs open to the ITCWRM remains a wide one.

At June 1, 1978 the list was as follows :

621. 18 training course proposals and 7 research proposals emanating from the Regional Water Management seminar (January 1978).
622. Those programmed at the Scientific Council level, supplementing the foregoing proposals which have been approved by that Council.
623. The planned program of seminars, training courses and research memoranda which was approved in principle by the members of the Mediterranean seminar held in Cannes in April 1978.
624. The training courses and seminar themes stemming from and adopted at the Data Acquisition and Management seminar in May 1978.
625. The program proposed in the form of topics by the Mediterranean experts meeting in Cannes in April 1978.

In view of the many proposals and requests mentioned above, it seems financially and physically unrealistic to honor all of them. For this reason an official ITCWRM program for the next two years will be submitted for approval by the Scientific Council shortly. However, it can be stated that a total of three training courses will be set up before March 1979.

This very brief description of the ITCWRM is completed by an outline of the permanent structure.

- That structure is headed up, directed and coordinated by François VALIRON, Managing Director in charge of the ITCWRM's General Management, to whom a General Management secretariat reports directly.
- Mr. VALIRON is assisted by a secretary general (Jean-Paul PFISTER) and two technical advisers (Y. EMSELLEM and P.F. TENIERE-BUCHOT).
- Documentation, external relations, management and accounting are handled in Sophia-Antipolis.
- A technical unit of five engineers conceives, makes arrangements for and oversees the training courses and seminars. That unit is responsible for practical implementation of the training courses and seminars scheduled by the Scientific Council. It will also serve as a support for the group of teachers, leaders and lecturers during the seminars and training courses. The engineers' professional background enables them to grasp quite a large area of the training needs expressed in particular by the representatives of the less developed countries. This unit also is based at Sophia-Antipolis.
- The Paris outpost is as already mentioned charged with assisting the permanent structure.

LIST OF CONTENTS  
OF THE THREE VOLUMES





# LIST OF CONTENTS OF VOLUME 1

SECTION A : BRIEF EXPOSÉ OF THE ELEMENTS FOR MEDITATION  
AND THE PROPOSITIONS FORMULATED BY THE  
SEMINAR ON REGIONAL WATER MANAGEMENT.

SECTION F : ALPHABETICAL INDEX OF PARTICIPATION AND  
INTRODUCTORY DOCUMENTS.

---

I — SECTION A

BRIEF EXPOSÉ OF THE ELEMENTS FOR  
MEDITATION AND THE PROPOSITIONS  
FORMULATED BY THE SEMINAR ON  
REGIONAL WATER MANAGEMENT

0. SOMMAIRE
1. INTRODUCTION
2. ORGANIZATION AND SESSION OF THE WORKS
  - 2.1. First day
  - 2.2. Workshop organization
3. MAIN REMARKS FROM THE WORKSHOPS
  - 3.1. Orientations and principles
  - 3.2. Experiences, competencies and preoccupations
  - 3.3. Pedagogical aspects
4. CONCLUSIONS AND RESULTS OF THE SEMINAR
  - 4.1. Themes
  - 4.2. Results
  - 4.3. Conclusions

I — SECTION F

ALPHABETICAL INDEX OF PARTICIPATION  
AND INTRODUCTORY DOCUMENTS

0. CONTENTS OF THE SECTION.
1. LIST OF PARTICIPANTS.
2. REPRESENTATIVES OF THE UNITED NATIONS ORGANIZATIONS.
3. REPRESENTATIVES OF NON GOVERNMENTAL ORGANIZATIONS.
4. REPRESENTATIVES OF THE ITCWRM.
5. SECRETARIAT.
6. INTERPRETERS.
7. LIST OF DOCUMENTS DISTRIBUTED BY THE ITCWRM  
AT THE OPENING OF THE SEMINAR.

# LIST OF CONTENTS OF THE VOLUME 2

SECTION B : INAUGURAL SESSION'S EXPOSÉS AND DEBATES.

SECTION C : DETAILED REPORT OF THE WORKSHOPS.

---

II — SECTION B

INAUGURAL SESSION'S EXPOSÉS AND DEBATES

0. CONTENTS
1. SPEECH BY MR LACROIX
2. SPEECH BY THE CHAIRMAN, SIR NORMAN ROWNTREE.
3. INTRODUCTORY EXPOSÉ BY MR VALIRON
  - 3.1. ITCWRM's creation
  - 3.2. The oneness of water problems
  - 3.3. Training possibilities offered by ITCWRM
  - 3.4. ITCWRM's international vocation
  - 3.5. The Scientific Council's composition
  - 3.6. The seminar objectives
  - 3.7. Opening of ITCWRM's doors to the outside world
  - 3.8. Progress made in the setting up of ITCWRM
4. SEMINAR PRESENTATION BY MR TENIERE BUCHOT.
  - 4.1. Organization of the seminar and development
  - 4.2. Philosophy of the Seminar
  - 4.3. Conducting of the debates
5. VICE CHAIRMEN'S INTERVENTIONS
5. EXCHANGES OF VIEW ON ITCWRM AND ITS ORGANIZATION

## II — SECTION C

### DETAILED REPORT OF THE WORKSHOPS

#### WORKSHOP I

#### 0. PRESENTATION OF WORKSHOP N° 1

#### OBIS · SUMMARY OF WORKSHOP N° 1

#### FIRST SUB-THEMES

#### 1. INTRODUCTORY EXPOSÉS

1.1. Mssrs AYIBOTELE and NEWSOME

1.2. Mssrs ROCHE and NEGULESCU

#### 2. DISCUSSION

2.1. Data related to ground water

2.2. Water and Agriculture

2.3. Data adequacy and response delay

2.4. Water quality and Public Health

2.5. Data collection and integrated planning

2.6. The developing countries' specific problems  
and the nature of ITCWRM's role.

2.7. Data banks

3. DISCUSSION ON THE SYNTHESIS AND DEBATE  
ON THE TASKS ASSIGNED TO ITCWRM

3.1. Research

3.2. Training

SECOND SUB-THEME

1. INTRODUCTORY EXPOSÉS

1.1. Mssrs LEYNAUD and RANGELEY

2. DISCUSSION

2.1. General water supply's problems  
in developing countries

2.2. Technological water supply's problems  
in developing countries

2.3. Resource's protection and planning

3. DISCUSSION AND SYNTHESIS

**WORKSHOP N° 2**

0. PRESENTATION OF THE WORKSHOP

OBIS SUMMARY OF WORKSHOP N° 2

1. MORNING OF TUESDAY 10TH JANUARY 1978

1.1. Inauguration and orientation by  
the Vice Chairman, Mr PIGANIOL

- 1.2. Mr ALBRECHT exposé and discussions
- 1.3. Brief exposé of the Niger Republic (Mr HASSANE), Thai (Mr BINSON), Turkish (Mr KULHEN) and American (Mr ZAPATA) experiences

## 2. AFTERNOON OF TUESDAY 10TH JANUARY 1978

- 2.1. Exposé by Mr WARFORD
- 2.2. Role of IBRD
- 2.3. The economic, social and psychological cost approaches
- 2.4. The restrictions implied in training and the increased efforts necessary in this field

## 3. MORNING OF WEDNESDAY 11TH JANUARY 1978

- 3.1. Role of international financing agencies
- 3.2. Critical study of the cost distribution systems
- 3.3. Methodological trial of the sale of water to users
- 3.4. Methodology of the intangible aspects of water economy (social and political aspects)
- 3.5. Project management and financing within a water policy

## 4. WEDNESDAY AFTERNOON : SYNTHESIS AND DRAFTING

- 4.1. Discussion
- 4.2. Synthesis



WORKSHOP N° 3

0. PRESENTATION OF THE WORKSHOP

OBIS SUMMARY OF WORKSHOP N° 3

1. MORNING OF TUESDAY 10TH JANUARY (FIRST PART)

- 1.1. Introductory exposé by Mr CANO
- 1.2. Speech by Mr CAMPELLO
- 1.3. Discussion

2. MORNING OF TUESDAY 10TH JANUARY (SECOND PART)

- 2.1. Speech by Mr NAJLIS
- 2.2. Discussion

3. AFTERNOON OF TUESDAY 10TH JANUARY

- 3.1. Discussion
- 3.2. Conditions for the elaboration of a synthesis draft - Sub-Theme 3.1.

4. MORNING OF WEDNESDAY 11TH JANUARY

- 4.1. Speech by Mr MONTANARI
- 4.2. Discussion

5. AFTERNOON OF WEDNESDAY 11TH JANUARY

- 5.1. Discussion of the synthesis project presented by Mr VALIRON (Sub-theme 3.1.)
- 5.2. Discussion of the synthesis project presented by Mr MONTANARI (Sub-theme 3.2.)

6. BIBLIOGRAPHICAL REFERENCES

- 6.1. Bibliography given by Mr CANO
- 6.2. References of a document transmitted by Mr GUGGINO

WORKSHOP N° 4

0. PRESENTATION OF THE WORKSHOP

OBIS SUMMARY OF WORKSHOP N° 4

1. MORNING OF TUESDAY 10TH JANUARY

- 1.1. Introductory exposé by Mr KINDLER
- 1.2. Speech by Mssrs DA CUNHA and JOHNSON
- 1.3. Debates and discussions

2. AFTERNOON OF TUESDAY 10TH JANUARY

- 2.1. Speech by Mr CAULFIELD
- 2.2. Debates and discussion

3. MORNING OF WEDNESDAY 11TH JANUARY

- 3.0. Speeches by Mssrs SANTEMA, KOVACS and TENIERE BUCHOT

4. AFTERNOON OF WEDNESDAY 11TH JANUARY

- 4.0 Synthesis

ANNEX - SHORT WRITTEN CONTRIBUTIONS  
PRESENTED DURING THE WORKSHOPS —

- "Short exposé on financial and economic problems"  
Mr. B. BINSON.
  - "Introduction to the subject on socio-political problems  
in regional water management"  
Mr. G. CANO.
  - "Suitable training of personnel responsible for instructing  
technicians in charge of training future water users"  
Mr. S. CAMPELLO.
-

LIST OF CONTENTS OF  
VOLUME 3

SECTION E : CONFERENCES AND COMMUNICATIONS.

---

### III - SECTION E

#### CONFERENCES AND COMMUNICATIONS

##### SUB-SECTION E.1. : CONFERENCES

0. SUMMARY OF THE SUB-SECTION
  
1. REGIONAL WATER PLANNING IN AN ARID COUNTRY.
  - 1.1. Exposé by Mr HARIRI
  - 1.2. Integral text of Mr HARIRI's communication
  - 1.3. Discussion
  
2. REGIONAL WATER PLANNING IN A COUNTRY HAVING IMPORTANT CLIMATIC AND HYDROLOGICAL CONTRASTS.
  - 2.1. Exposé by Mr BANERJEE
  - 2.2. Integral text of Mr BANERJEE's communication
  - 2.3. Discussion
  
3. REGIONAL WATER PLANNING IN AN EUROPEAN COUNTRY.
  - 3.1. Exposé by Mr VALIRON
  - 3.2. Integral text of Mr VALIRON's communication
  - 3.3. Discussion

## SUB-SECTION E.2. : COMMUNICATIONS

### SUMMARY.

#### WORKSHOP N° 1

- MR AYIBOTELE  
Introductory Exposé
- MR NEWSOME  
Inventory of useful regional water planning data
- MR LEYNAUD  
Technologie disponible et applicable  
(Introduction à la discussion)
- MR AYIBOTELE  
Available and applicable technology
- MR MARGAT  
Inventaire des données utiles à la gestion  
régionale de l'eau
- MR ROCHE  
Inventaire des données utiles à la gestion  
régionale de l'eau  
Les projets "productifs"
- MR NEGULESCU  
Technologie disponible et applicable
- MR RANGELEY  
Available and feasible technologies

#### WORKSHOP N° 2

- MR ALBRECHT  
Financing origins and cost division  
The example RUHR.

### WORKSHOP N° 3

- MR CAMPELLO  
Les intérêts en présence pour l'usage de l'eau
- MR NAJLIS  
Socio Political problems
- MR MONTANARI  
Public participation and acceptance

### WORKSHOP N° 4

- MR KINDLER  
Organization and institutional aspects
  - MR JOHNSON  
Administration decor and institutional organization
  - MR DA CUNHA (OE)  
Water resources management institutional framework
  - MR DA CUNHA (OF)  
Organisation institutionnelle de la gestion des eaux
  - MR SANTEMA  
Political water management instruments  
(a discussion paper)
  - MR TENIERE BUCHOT  
Présentation des instruments d'économie politique  
de l'Environnement
  - MR KOVACS  
Methods and experiences of water management  
Long term planning in hungary
-





# ***SECTION A***

BRIEF EXPOSE OF THE ELEMENTS  
FOR MEDITATION AND THE PROPOSITIONS  
FORMULATED BY THE SEMINAR  
ON REGIONAL WATER MANAGEMENT

CONTENTS

1. INTRODUCTION.
  2. ORGANIZATION AND SEQUENCE OF THE WORKS.
  3. MAIN REMARKS FROM THE WORKSHOPS.
  4. CONCLUSIONS AND RESULTS OF THE SEMINAR.
  5. DETAILED INDEX.
-

## 1. INTRODUCTION.

As can be seen from the five sections (A, B, C, D and E) which comprise this publication, the main objective of the water experts who met at Sophia-Antipolis (France) between the 8th and 12th January 1978 was to provide the CEFIGRE with poles of reflection and research in order to allow the centre to meet - in relation to the means of which it disposes - as correctly, as operationally and as practically as possible with the preoccupations of the international community in the field of the training of water resource managers. For this reason, this publication is to be :

- a faithful statement of the various written and oral contributions of experts from over forty countries or of representatives of international bodies concerned by the management of water resources ;
- an information tool for those responsible politically, technically and administratively who must assume, in their respective countries, the delicate mission of permanently improving the quantitative and qualitative aspects of water management ;
- a modest contribution to international reflection in the field of the economic and social valorization of natural riches (water) indispensable to life, badly distributed and vulnerable. A reflection which is previous and indispensable to action, this seminar was designed by the CEFIGRE mainly as a dialogue and especially between the 25 experts of the African, Latin American and Asian countries and the 26 representatives of the industrialized world. This numerical parity excludes representatives of internal bodies and those of the CEFIGRE. However, this was not specifically sought.

The objectives of the CEFIGRE management throughout this seminar were as follows :

- to prevent the dialogue between the developing world and the industrial world from ending in two parallel monologues ;
- to unit a certain number of international competencies and experiences in the field of water management which would give rise for the Scientific Counsel of the CEFIGRE (summoned for the 16th January 1978) to ideas, programmes and to realistic and concrete actions and recommendations ;
- to make the members of the international community responsible for the management of water resources realize that they dispose of a training tool which is open to all ideas, suggestions or recommendations at their service.

Were these objectives obtained? We think so, and it up to the reader to judge.

## 2. ORGANIZATION AND SEQUENCE OF THE WORKS.

### 2.1. IT WAS IMPORTANT THAT RIGHT FROM THE FIRST DAY INFORMATION BE SUPPLIED WHICH WOULD MAKE IT POSSIBLE (Section B and Conferences of Section E) :

- to inform the participants of the conditions of the chronological and practical sequences of the seminar ;
- to specify the missions, the organization and the objectives of the CEFIGRE ;
- to sensitize the numerous celebrities who are present to the fact that the CEFIGRE had been designed at Nairobi as a training tool at the disposal and at the service of the international community and, prioritively, to allow developing countries to benefit from it ;
- to engage in a dialogue based on three conferences concerning Iranian, Indian, and French experiences in the fields of national and decentralized water management.

Sir Norman ROWNTREE, Messrs. AYIBOTELE, PIGANIOL, CANO, KINDLER, HARIRI, BANERJEE, and VALIRON, were to animate points a, b, c, and d, given over to the first day (cf. Sections B and E).

### 2.2. WORKSHOP ORGANIZATION (Section C and Communications of Sections E).

The participants unanimously agreed (cf. Sections B and C) that the distribution into workshops and by theme was both practical and artificial :

- artificial insofar as it is difficult to establish watertight barriers between the various aspects of water resource management ;
- practical insofar as it is easy to think more efficiently within a more restricted assembly.

The comparison and synthesis work was carried out during the plenary session of the 12th January (cf. Section D).

Using the above elements, we thought it useful to present the workshops and also to provide the distribution figures :

#### a) Workshop themes.

WORKSHOP No. 1 : Technical and technological aspects of the regional water management programmes :

- Sub-theme 1.1. : Inventory of the data useful to water management.
- Sub-theme 1.2. : Available and applicable technology.

WORKSHOP No. 2 : Economy and Finance :

- Sub-theme 2.1. : Origin of the financing and cost sharing.
- Sub-theme 2.2. : Financing of hydraulic works.

WORKSHOP No. 3 : Study of the socio-political problems :

- Sub-theme 3.1. : Characterization of the interests present in the water utilization.
- Sub-theme 3.2. : Public acceptability and participation.

WORKSHOP No. 4 : Regional water management institutions :

- Sub-theme 4.1. : Administrative decor and institutional organization.
- Sub-theme 4.2. : Political regional water management instruments in practice.

b) The Presidents, reporters and animators of the workshops : 26 persons.

b1. The seminar was chaired by Sir Norman ROWNTREE.

b2. The management and coordination of the four workshops was ensured by the Vice Chairmen of the seminar, Messrs. :

- . AYIBOTELE managed workshop (1)
- . PIGANIOL managed workshop (2)
- . CANO managed workshop (3)
- . KINDLER managed workshop (4)

b3. The reporters were those amongst the experts entrusted with introducing the debate, in the form of an exposé, and collecting the conclusions (synthesis) during the examination of a sub-theme connected with each of the workshop themes. Thus, Messrs. :

- . NEWSOME and LEYNAUD were reporters in workshop (1)
- . BINSON and WARFORD were reporters in workshop (2)
- . CAMPELLO and MONTANARI were reporters in workshop (3)
- . JOHNSON and SANTEMA were reporters in workshop (4)

b4. The mission of the animators was to assist the reporters by means of written communications or oral interventions. Thus, Messrs. :

- . NEGULESCU, ROCHE and MARGAT were animators in workshop (1)
- . ALBRECHT, DUBREUIL, LACROIX and ZAPATA were animators in workshop (2)
- . NAJLIS, GUGGINO and STOTT were animators in workshop (3)
- . DA CUNHA, CAULFIELD, VOLKER, KOVACS and TENIERE-BUCHOT were animators in workshop (4)

c) Distribution table.

Whilst attempting to numerically balance the four workshops, each participant (except for the Chairmen, reporters and animators) had total latitude for contributing to the work of the workshop of his choice.

It should be noted that this resulted in the following distribution (\*):

Workshop	Representatives of developing countries	Representatives of industrialized countries	Representatives of international bodies	CEFIGRE Representatives	Total
(1)	4	5	2	2	13
(2)	3	1	1	1	6
(3)	6	0	2	2	10
(4)	7	2	0	1	10
Total	20	8	5	6	39

d) The Chairmen of the workshops were mainly involved with :

- d1. balancing, in relation to the time allotted to the workshops, the various communications laid down, by means of debates as broad and as rich as possible ;
- d2. concluding with concrete propositions for training to be communicated to the CEFIGRE Scientific Counsel ;
- d3. confronting their works in order to avoid incoherence or overlapping on the eve of the plenary meeting entrusted with the elaboration of a synthesis document (cf. Section D).

e) Chronology.

- e1. Monday, the 9th January, was given over to the inaugural session and to a debate on the three conferences on the presentation of water management in Iran, India and France (cf. Section B and Conferences of Section E) ;
- e2. Tuesday, the 10th and Wednesday, the 11th January, were given over to work in the workshops (cf. Section C and Communications of Section E) ;
- e3. Thursday, the 12th January, was reserved for the plenary session in charge of appreciating the synthesis reports of the four workshops (cf. Section D).

---

(\*) This table excludes the Chairmen, reporters and animators, i.e., 26 persons.

### 3. MAIN WORKSHOP REFLECTIONS.

We will expose as concisely as we can, attempting to be as unschematic as possible, the problems evoked by the workshops and the reflections elaborated or recommendations formulated by the participants.

#### 3.1. ORIENTATIONS AND PRINCIPLES.

311. Developing countries constituted - at their request - the privileged intervention sector of the CEFIGRE. The diversity in the levels of economical development reached, the size or the water resource management problems led many participants to recommend that the intervention of the CEFIGRE be addressed to restricted and relatively homogeneous groups of countries. It was up to the CEFIGRE to define a certain number of objective criteria allowing such groups to be formed.
312. The CEFIGRE is neither an engineering school nor a university, nor is it a research body. This obviously does not mean that the CEFIGRE is obliged to isolate scientific information which circulate and which is diffused by the bodies mentioned. Rather, it means that the vocation of the centre is to help professionals to make the solutions to problems which are real life problems or which probably will be, and to make concrete progress. This led several participants to insist on the practical and concrete aspect which should above all mark the courses.
313. The complex liaisons which exist between the various aspects of water management prevent any sectorial analysis from being made. Rather, they result in a global approach. These liaisons also lead to scientific scrutiny helpful for a better overall vision. This reflection led the participants to recommend that an overall impregnation precede (in the form of one day for instance) any intervention by the CEFIGRE.

#### 3.2. EXPERIENCES, COMPETENCIES AND PREOCCUPATIONS.

It is certain that the seminar grouped together numerous and rich professional experiences and very varied technical, economical and administrative competencies. This meeting was to make it possible to express - and not resolve - a certain number of preoccupations of which we will mention the main ones :

321. With regard to the international financing of a project in which is located the threshold which separates the limit of the profitability of the investment (bank) and international assistance (solidarity).
322. In a developing country, how to introduce a notion of social impact next to a traditional tool for the analysis of economic profitability.

323. Technology transfer : the participants apprehended this aspect as they considered it as a sum of efforts to be exerted simultaneously in different directions :

- . the rapid and intense effort of assimilation of techniques termed sophisticated or peak ;
- . the experimental exchange between countries availing of comperable means and around common preoccupations.

These two aspects of analysis led to two directions of training and exchange :

- . courses or seminars whose theme is the initiation to peak techniques ;
- . courses or seminars whose theme is to establish balances and exchanges of experience.

324. Research or applied study : this particularly complex section was analyzed by the participants as :

- . capable of constituting the far-reaching study in a concrete case ;
- . the classical university thesis for which the CEFIGRE is not equipped (and whose vocation is not to be so equipped), but the centre could provide its assistance for orientating a future candidate ;
- . a permanent increase of knowledge consisting in finding highly concrete solutions to practical problems, sometimes underestimated in development.

325. The working unit : the participants drew up a balance of the various working units and breakdowns :

- . political breakdown ;
- . administrative breakdown ;
- . economic breakdown.

Whilst recalling that the engineer entrusted with development must take into account the above breakdowns, the participants stressed the fact that the hydrographic basin remained the most favourable entity for the correct analysis of water resource management. The participants also were led to :

- . the confrontation of the political breakdown and of the basin notion led them to recommend that the CEFIGRE should be able to organize a reflection (seminar) on this subject and particularly with regard to international basins ;
- . the confrontation of the administrative breakdown and the basin notion was to lead them to deal with the notion of the power of decision (centralized or decentralized) in the field of water resource management ;



- . the confrontation of economic activity and the basin notion led them to deal with the problems of distribution, assignment and protection of the resource.

### 3.3. PEDAGOGICAL ASPECTS.

The participants recommended that the CEFIGRE be capable of making three types of intervention :

331. The seminar, a relatively short demonstration (one week) and the meeting of specialists on a determined theme.
332. The course, a training period of average duration reserved for specialists entrusted with the realization of development and assignment programmes within technical decision structures.
333. The paper on research, an individual enterprise and more spread out over a period of time.

This pedagogical breakdown made by the participants was accompanied by debates which provided the indispensable shadings and liaisons existing between the three types of interventions. The latter may occur, either in France (Sophia-Antipolis), or on the-the-spot, with the collaboration of the countries who would request it.

334. The training of technicians and senior technicians was formulated in a wish expressed by certain representatives of developing countries at the seminar. In this field, the CEFIGRE representatives specified that :
  - . whilst they chaired the preoccupations mentioned (technicians), the training of this category of specialists was not part of the missions assigned to the CEFIGRE. However, the training of future trainers was one of the priority activities of the CEFIGRE ;
  - . all the recommendations and the assistance of the competent bodies of the United Nations in this field tended to encourage the requesting countries to train this category of specialists by opening establishments specialized to this effect.
335. The participation and the provision made by the trainee were considered as determining factors in the success of the training enterprise. It is up to the CEFIGRE to design, for each theme and for each course, and to organize this provision and this participation.
336. The pedagogical and teaching animation for : recruited during a course and materially bearing on the permanent structure of the CEFIGRE, they will come from highly diversified geographical and professional horizons. International competence available at the time of the course, and which will be an authority on the theme studied will be called on in this field.

337. The utilization of modern and experimented means (audio-visual) of diffusion of knowledge was recommended by the participants in the field of the financial means of which the CEFIGRE disposes.

## 4. CONCLUSIONS AND RESULTS OF THE SEMINAR.

### 4.1. THEMES.

The synthesis report exposed at the plenary and closing sessions were approved by the participants after some slight amendments had been made. The participants then recommended that a "synthesis of syntheses" be elaborated for the Scientific Counsel entrusted with the examination of the propositions of the seminar. This synthesis of the synthesis reports should bring to light 18 training themes of which the complete list is set out below :

#### 411. WORKSHOP No. 1 - (technique and technology)

##### a) Data

1. Design of a data-gathering network (including the financial aspects concerning design, planning and implementation).
2. Biological indices.
3. Rapid acquisition and transmission of data.
4. Data necessary for irrigation, drainage and flood control.
5. Water requirement forecast.

##### b) Techniques

- 4 b. Techniques available for irrigation, drainage and flood control.
6. Development, control and protection of water resources (including the conservation and valorization of the soils).
7. Additional of potable water and purification in rural areas.
- 7 b. Urban zone potable water supply.
- 7 c. Water supply for industry.
8. Protection and development of aquatic resources. Relationship between the environment policies and water management.

#### 412. WORKSHOP No. 2 - (economy and finance).

9. General water policy considered as an element of a national development policy.
10. Hydraulic realization cost establishment policy (including national financing aspects) (cf. 10 b and 10 c in workshop No. 4).
11. Critical and compared analysis of the existing types of institutions for regional water management (financial aspects) (cf. 11 b in workshop No. 4).
12. Economic optimization of project management.

413. WORKSHOP No. 3 - (socio-political).

- Special subject : to allow for a period of information (one day or more) on the characterization of interests involved for the utilization of water. This information will be developed in each course.

13. Courses specific to homogeneous regions :
  - . for instance : Sahel Zone  
Countries in the Sahara  
Zones situated in Latin America.
- 11 c. Comparison of experiences acquired in countries with federal political structures and/or having decentralized water management. Difference options of water administration (cf. 11 b in workshop No. 4).
14. Public participation and education of utilizers in small rural communities.
15. Training of trainers.
16. Administration of international rivers and basins (including protection of the environment) (theme also common to workshop No. 4).

414. WORKSHOP No. 4.

- 11 b. Comparative analysis of the water management and planification institutions (cf. 11 in workshop No. 2 and 11 c. in workshop No. 3).
17. Comparative analysis of the decisional procedures entering into water policies.
- 10 b. Public and private aspects of water management (administrative policy and price establishment).
- 10 c. International financing of water management.
18. Instruments available for water management.

4.2. RESULTS.

The participants wished to present to the members of the Scientific Counsel the results :

421. first of all grouped together and hierarchized. The grouping together was intended to gather into a number of themes not exceeding 6 or 7 the 18 preceding themes. This grouping together has a double goal :
  - . to concentrate in a single theme all the themes which were fairly close to each other or of which certain aspects had double use,
  - . to adopt the programme to the means granted to the CEFIGRE for the next two years.

422. The hierarchization was intended to separate a certain consensus around the priorities in the themes.
423. The participants also wished to present to the members of the Scientific Counsel, results accompanied by a programme of lines of research. They thus proposed seven themes linked to three possible lines of research of a research programme widespread in the sense of applied studies. In the following paragraphs, the propositions will be found, grouped together by line of research. Each theme was analyzed from four different criteria :
- . comparative study of concrete cases,
  - . functional and structural analysis of interests involved in the use of water,
  - . geographical breakdowns (regions), administrative or hydrographic breakdowns (basins),
  - . subject of teaching and training.
- . The previous approach was to lead to the inauguration of three lines of research as defined in paragraph 424 (first line), 425 (second line) and 426 (third line).
424. Technical and technological line (three themes) :
- . the acquisition, transmission and utilization of data,
  - . hydraulic problems connected with the rural world,
  - . water supply and purification (urban and industrial zones).
425. Economic line (three themes) :
- . institutional financial instruments of a water policy.
426. The problem of international basins.

#### 4.3. CONCLUSIONS.

The United Scientific Counsel was to hold its session the day after the closing of the seminar work. The works of the Scientific Counsel were also the subject of a publication instituted by the CEFIGRE. It should be noted that the Scientific Counsel, during a debate, approved the programme (grouped themes) which was presented to it by the Chairman of the seminar, Sir Norman ROWNTREE, and by Messrs. VALIRON and TENIERE-BUCHOT.

This approval of the works of the seminar by the Scientific Counsel is proof of the policy of the propositions of the participants.

Thus, apart from the interventions already programmed by the CEFIGRE at the time of the seminar meeting, i.e. : a seminar on the Mediterranean region (April 1978) and a seminar on the gathering of data (May 1978), a programme resulted from the works of this seminar which, although officious (since only the Scientific Counsel is competent to officially set the orientation and to approve programmes), was still complete.



# ***SECTION F***

**ALPHABETICAL INDEX OF PARTICIPATION  
AND INTRODUCTORY DOCUMENTS**





- SUMMARY -

1. LIST OF PARTICIPANTS
  2. REPRESENTATIVES OF THE UNITED NATIONS ORGANIZATIONS.
  3. REPRESENTATIVES OF INTERNATIONAL ORGANIZATIONS.
  4. REPRESENTATIVES OF ITCWRM
  5. SECRETARIAT
  6. INTERPRETERS
  7. LIST OF DOCUMENTS DISTRIBUTED BY ITCWRM AT THE SEMINAR OPENING SESSION.
-



1. LIST OF PARTICIPANTS

ARGENTINA

- Mr. CANO Guillermo J.
- Mr. VASQUEZ AVILA Arturo José

BRAZIL

- Mr. CAMPELLO Sylvio
- Mr. ROESTLER Ernesto A.

CANADA

- Mr. HARVEY Bernard

COLOMBIA

- Mr. ALVARADO Alberto

CENTRAL AFRICAN EMPIRE

- Mr. FARRA FRONT François

FRANCE

- Mr. COIN Louis
- Mr. DUBREUIL Pierre
- Mr. LACROIX Jean-Louis
- Mr. LEYNAUD Germain
- Mr. MARGAT Jean
- Mr. PERES Jean-Marie
- Mr. PIGANIOL Pierre
- Mr. ROCHE Marcel

GHANA

- Mr. AYIBOTELE Nii Boi

GUATEMALA

- Mr. GARCIA Luis Ernesto

HUNGARIA

- Mr. KOVACS Gyorgy

INDIA

- Mr. BANERJEE S. K.

INDONESIA

- Mr. KUNTJORO Jakti

IRAN

- Mr. HARIRI Davoud

IRELAND

- Mr. DOOGE James C. I.

ITALY

- Mr. GUGGINO Emanuele

ISRAEL

- Mr. WIENER Aron

KENYA

- Mr. KABURU Seraphim M. R.

MEXICO

- Mr. AGUILAR AMILPA Enrique

The NETHERLANDS

- Mr. SANTEMA, with one of his collaborators  
Mr. LANGEWEG.

- Mr. VOLKER A.

NIGER

- Mr. HASSANE Abdou

NIGERIA

- Mr. OGUNROMBI J. A.

PARAGUAY

- Mr. FAQUIER Luis Sanchez

PORTUGAL

- Mr. DA CUNHA Luis Veiga

RUMANIA

- Mr. NEGULESCU Mircea

THAILAND

- Mr. BINSON Boonrod

TUNISIA

- Mr. ALOUINI Khemais
- Mr. GANA Fathi

TOGO

- Mr. LAWSON Boe Allah

TURKEY

- Mr. KUHLEN Mufit

UNITED KINGDOM

- Mr. NEWSOME David
- Mr. RANGELEY W. R.
- Sir Norman ROWNTREE
- Mr. THORPE Brian
- Mr. STOTT Peter

UPPER VOLTA

- Mr. OUEDRAOGO Leopold
- Mr. ZABRE Hado Paul

U. S. A.

- Mr. CAULFIELD Henry
- Mr. JOHNSON Reuben
- Mr. MONTANARI Francis
- Mr. ZAPATA Juan Antonio

VENEZUELA

- Mr. LIZZARALBE Alberto

WEST GERMANY

- Mr. ALBRECHT Detlef

ZAIRE

- Mr. LUMU Badimbaye Matu
-

2. REPRESENTATIVES OF THE UNITED NATIONS ORGANIZATIONS

Mr. AMBROGGI Robert (U.N.P.D.)  
Mr. ETIENNE Gérard (W.H.O.)  
Mr. GILBRICHT Wilfried (U.N.E.S.C.O.)  
Mr. NEMEC Jaromir (W.M.O.)

3. REPRESENTATIVES OF INTERNATIONAL ORGANIZATIONS

Mr. KINDLER Janus (I.I.A.S.A.)  
Mr. NAJLIS Pierre (U.N.O.-C.N.R.E.T.)  
Mr. LEE Terence (U.N.O.-C.E.P.A.L.)  
Mr. WARFORD Jeremy (I.B.R.D.)

4. REPRESENTATIVES OF I.T.C.W.R.M.

Mrs. FORKASIEWICZ Janina  
Mr. EMSELLEM Yves  
Mr. HEMMADI Hamed  
Miss LEGRAND Sopia (documentation)  
Mr. MOLINARI Jacques  
Mr. PFISTER Jean-Paul  
Mr. TENIERE-BUCHOT Pierre-Frédéric  
Mr. VALIRON François

5. SECRETARIAT

Miss RICHARD Martine  
Miss TIXERONT Marie-Noëlle

6. INTERPRETERS

Mr. BANCAUD Dominique  
Miss GERST Nelly  
Mrs. REICHENBACH Solange  
Mr. SALA Jacques

7. LIST OF DOCUMENTS PROVIDED BY THE ITCWRM AT THE SEMINAR OPENING

- Report of the first Scientific Council meeting.
- Proposal of a program undertaken by the ITCWRM for the formation of the water technicians from the developing countries.
- Documentary questionnaire.
- ITCWRM's program for the first year of activities.

Various communications have been added to these three documents. (cf. Section E - Volume 3)

---