

**Final Report**

**REPORT ON THE  
FIRST CONSULTATIVE GROUP MEETING**

**ON CEHANEY**

**Amman, 6 - 8 June 1968**

WHO REGIONAL OFFICE FOR THE EASTERN MEDITERRANEAN  
BUREAU RÉGIONAL OMS DE LA MÉDITERRANÉE ORIENTALE  
JERUSALEM



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**WHO REGIONAL OFFICE FOR THE EASTERN MEDITERRANEAN  
BUREAU RÉGIONAL OMS DE LA MÉDITERRANÉE ORIENTALE**

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**REPORT ON THE**  
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**ON CEHNET**  
**Amman, 6 - 8 June 1988**

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**AMMAN**  
**JORDAN**  
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## LIST OF ABBREVIATIONS

AACR2	:	Anglo-American Cataloguing Rules, 2nd edition
ALDOC	:	Arab League Documentation and Information Centre
ALECSO	:	Arab League Educational, Cultural and Scientific Organization
ARIS-NET	:	Arab Information Systems Network
ASMO	:	Arab Organization for Standardization and Meteorology
AV	:	Audio-Visual
CC	:	Coordinating Centre
CCF	:	Common Communication Format
CD-ROM	:	Compact Disk - Read Only Memory
CDS/ISIS	:	Computerized Documentation Services/Integrated Set of Information Systems
CEHA	:	WHO's Regional Centre for Environmental Health Activities, Amman, Jordan
CEHANET	:	WHO/CEHA Environmental Health Regional Information Network
CEPIS	:	Pan American Centre for Sanitary Engineering and Environmental Sciences, Lima, Peru
CSD	:	RSS Computer Systems Department
CWS	:	Community Water Supply and Sanitation
DBMS	:	Data Base Management System
EEC	:	European Economic Community
EH	:	Environmental Health
EMR	:	Eastern Mediterranean Region (of WHO)
EMRO	:	Eastern Mediterranean Regional Office (of WHO)
HLSP	:	Health Literature Services Programme
HLT	:	Health Literature

IDRC : International Development Research Centre, Ottawa,  
 Canada

IDWSSD : International Drinking Water Supply and Sanitation  
 Decade, 1981-1990

IFLA : International Federation of Library Associations  
 and Institutions

INFOTERRA : The International Environmental Information System

IRC : International Reference Centre for Community Water  
 Supply and Sanitation, The Hague, The Netherlands

ISBD : International Standard Bibliographic Description

LAS : League of Arab States

MOP : Ministry of Planning (Jordan)

NCR : National Council for Research, Sudan

NIS : National Information System (Jordan)

NRCR : National Register of Current Research

OCR : Optical Character Recognition

PADIS : Pan-African Development Information System

PEPAS : (WHO's) Western Pacific Regional Centre for the  
 Promotion of Environmental Planning and Applied  
 Studies

POETRI : Programme on Exchange and Transfer of Information

REPIDISCA : Pan American Network for Information and Documenta-  
 tion in Sanitary Engineering and Environmental  
 Sciences

RSS : Royal Scientific Society, Jordan

SID : WHO Services of Information and Documentation

SSRC : Scientific Studies and Research Centre, Syria

STIC : RSS Scientific and Technical Information Centre

SYRISNET : Syrian Information Systems Network

UNBIS : United Nations Bibliographic Indexing System

UNDP : United Nations Development Programme

UNESCO : United Nations Educational, Scientific and Cultural  
Organization

WHO : World Health Organization

WHOLAN : WHO Local Area Network

WHOLIS : WHO Library Integrated System

WS & S : Water Supply and Sanitation

## ABSTRACT

- Subject : The first of two consultation meetings regarding planning for the establishment of CEHANET
- Concerning : The establishment of CEHANET: CEHA Environmental Health Regional Information Network
- Regarding : The First Consultative Group Meeting on CEHANET
- Occasion : The meeting of 6 - 8 June 1988, in Amman, Jordan
- Sponsors : CEHA, in collaboration with the Ministry of Health, Jordan
- Attendance : Fifteen participants from fifteen countries plus four WHO Regional and HQ staff, and eight consultants and temporary advisors
- Synopsis : The Meeting was able to discuss and make recommendations, through its general sessions and four working groups, on all the points put on the agenda including: CEHANET Workplan 1988/89, the network structure, services to be offered by the network system, systems and tools to be developed and/or adapted, the training and staffing needs and methods of selection and collaboration with national centres and cooperation with national and regional information systems.

## 1. INTRODUCTION

This is the draft final report of the First Consultative Group Meeting on CEHANET.

The Meeting took place from 6th to 8th June 1988, in Amman, Jordan. It was arranged by the WHO Regional Centre for Environmental Health Activities (CEHA) in collaboration with the Ministry of Health, Jordan.

The Meeting's Programme is to be found in Annex I. A List of Participants is given in Annex II.

## 2. OPENING CEREMONY

The Meeting was inaugurated at the Jerusalem Hotel in Amman on Monday 6th June 1988 under the patronage of His Excellency the Minister of Health, Jordan, who welcomed the participants and affirmed the importance of their advice for the whole Region. He emphasized the importance of environmental health in Jordan and the Region and that laws and regulations for the protection of the environment are being drawn up.

Dr N. Akmanoglu delivered a message from Dr H. A. Gezairy, the Regional Director, WHO Eastern Mediterranean Region. Dr Gezairy emphasized the role of CEHA in developing effective means to assist countries of the Region in coping with a broad range of environmental health issues. The role of information in the development process was also underlined. Dr Gezairy then presented the aims of CEHANET: the WHO/CEHA Environmental Health Regional Information Network. It aims at promoting regional cooperation in information exchange, helps to build the information infrastructures in participating countries, demonstrates the commitment of government agencies towards the network, sensitizes institutions and personnel in the Region to the benefit of information accessibility, activates cooperation in the Region and facilitates the provision of information services. Dr Gezairy emphasized the issues that the meeting should look into, including the network structure, systems and tools, services, staffing and training, user groups and collaboration with national institutions. Attention was drawn to the recommendations made by the Advisory Group Meeting held in Amman in December 1987.

## 3. ELECTION OF OFFICERS

Officers were elected as follows:

Chairman : Dr Yusif Nusseir, RSS, Jordan  
Vice-Chairman : Dr Nabil Harfoush, SSRC, Syria  
Rapporteur : Dr Najeeb Al-Shorbaji, CEHA



#### 4. MEETING STRUCTURE AND COMPONENTS

##### 4.1 WHO Papers

Papers setting out the purpose of the Meeting, giving a presentation of CEHANET project and papers on the various aspects of networking (structure, services, systems, tools, staffing, training, regional cooperation) had been prepared by WHO and CEHANET Temporary Advisors and consultants.

##### 4.2 Participants Papers

Country papers describing the environmental health structure, the water supply and sanitation institutions, and the information/documentation services in each country, were presented by participants.

All documents presented at the Meeting are listed in Annex III. Summaries of the papers and of the discussions that followed their presentation are given in Section 5.

##### 4.3 Working Groups

Four working groups were formed. The procedures followed and summaries of their recommendations are given in Section 6. The composition and the reports of the working groups are included as Annexes IV and V respectively.

##### 4.4 Social Activities

A visit was paid to CEHA by some of the participants who were visiting Jordan for the first time. A tour to Jerash after the closing session was also organized for non-Jordanian participants.

##### 4.5 Closing Session

The closing session was held on Wednesday 8th June 1988, where Dr N. Akmanoglu made closing remarks and Dr Y. Nusseir and Mr Van Damme thanked the organizers on behalf of the participants.

#### 5. SUMMARIES OF PRESENTATIONS

Dr N. Akmanoglu stated the purpose and objectives of the Meeting in relation to the establishment and development of CEHANET. He emphasized the various aspects involved in the network: the nature of the network, the systems and tools to be used, services to be offered, staffing and training needs, collaboration and cooperation with national information systems in the Region and collaboration with EH institutions in EMR member states.

**5.1 "The WHO Library and the Information and Documentation Services", by Ms A. M. Pfister**

The paper described the role of the WHO library in support of WHO programmes. A full account was presented of the integrated library system, and the various aspects of library automation. WHO Local Area Network was also discussed and its role in information transfer was emphasized. The information and documentation services offered by WHO include: reference and document searches, specialized bibliographies and document delivery. The HLT-SIDS network was established to enhance cooperation and information exchange in WHO. A brief description of CWS Documentation Centre was given. Areas for cooperation between CEHA and HQ were proposed: format "ready to use" modules, training and consultation.

**5.2 "Library and Information Services in EMRO", by Mr G. Guirguis**

The presentation started with a description of the library system at EMRO including the collection, organization, user, services and products. The relationship between EMRO library and its National Focal Points and the problems involved were shown. The services that the library could supply were given as computerized bibliographies, photocopies of articles, basic lists of documents, Regional Index Medicus, training programmes, research on new technology, user surveys and studies and distribution of WHO publications. The on-line information services offered and the problems involved were mentioned. Recommendations for CEHA were presented including: establishment of an independent CEHA information component, survey of potential users, creation of data bases, pooling of resources with IRC, PEPAS and others, gradual building of a regional data base, issuing of an information bulletin and provision of document delivery service, probably on a subsidized basis.

The discussion that followed the two presentations concentrated on:

- Accessibility of WHO publications to research workers and post-graduate students,
- The existence and the role of focal points designated in the countries of the Region,
- Document delivery from HQ to water authorities,
- The ability of information technology (CD-ROM) to solve the information problems in the Region,
- The definition of Environmental Health in the Region.
- User sensitization and the applicability of information from the developed world to the problems of the Region,

- The need to define information needs and systems before discussing services,
- Types of information users in the Region.

**5.3 "Brief Presentation of CEHANET Project and Workplan for 1988-1989", by Dr N. Akmanoglu**

The speaker reviewed briefly CEHA development and activities. CEHANET as the major information component in CEHA was described. CEHANET aims and objectives, as well as users of CEHANET and their institutional affiliations and a list of the activities which have been accomplished were presented. The workplan detailed the time schedule and the activities to be performed during the 24 months of the project life, including: staffing, training, development and adaptation of systems and tools, services to be offered, development of CEHA Documentation unit and collaboration with national institutions.

The discussion that followed was general, because all aspects of the project and the workplan were to be discussed thoroughly in one of the following sessions.

**5.4 "CEHANET Information Services", by Dr N. Al-Shorbaji**

The paper emphasized CEHANET commitment to provide information services to its user group in the Region. CEHANET services were defined as well as the facilities provided by the network system for the use of documents and the dissemination of EH information. Prerequisites and limitations for CEHANET were presented. The proposed services include: reference services, current awareness services, document delivery services, retrospective bibliographic services and other non-bibliographic services. Evaluation of the services and feedback were highlighted as important factors for development.

The discussion that followed concentrated on:

- Priority areas in providing information services,
- Feasibility of providing such services in the light of the limitations given,
- Document delivery services.

**5.5 "Needs Assessment/Market Analysis (for CEHANET)", by Mr J. M. G. Van Damme**

The paper and its presentation introduced the marketing concept of needs assessment to the field of information. In information supply, just as with the supply of products to other markets, the supplier should know his users, as far as their perceived and unperceived needs are concerned. The paper defined four major actions that need to be addressed to arrive at adequate information services: analysis of needs and available resources; product development; capacity building; and promotion of information. The economic aspect of information was emphasized namely that information has a cost, and someone has to pay for it. Analysis should include the target group that CEHANET wants to serve, the message(s) to be transmitted to the user and the media which will be used for the transmission. In all cases, feedback is important. CEHANET should make use of the various experiences existing in the Region and worldwide, including techniques for investigating information needs and the information systems in the Region.

The discussion that followed concentrated on:

- Cost of information and whether CEHA is going to charge for its services,
- Cooperation between IRC and CEHANET,
- The starting point of a project like CEHANET: Think big, Start small
- Promotion of CEHANET services to make people more aware of its existence,
- EH is an issue in all countries and relevant information is vital.

**5.6 "A Trial Survey on Information Needs in EMR", by Dr N. Al-Shorbaji**

It has been recommended that CEHA should conduct surveys on information needs and resources in EMR. This survey covered six countries in the Region (Afghanistan, Jordan, Oman, Pakistan, Somalia and Yemen Arab Republic). 32 individuals from 28 organizations filled in the POETRI forms. The limitations and draw-backs of the survey were reviewed. The results show:

- English is the most used language in the Region followed by Arabic,
- All fields of WS & S are covered in the organizations surveyed.
- There were 102 documentalists working in the 28 organizations but 7 organizations have no documentalists at all,

- Libraries/information units in the organizations stock all types of documents, but few bibliographies, catalogues, standards and microforms are available,
- Information services are provided by all organizations and available to people working there; some services are restricted,
- Information is supplied by all media known except microcopies,
- Journal holdings in the libraries are poor,
- Information needs vary among organizations according to the type of functions performed,
- Government and other official information constitutes the most used sources,
- Most respondents use information sources at work place and the use of a library is mainly to consult a particular book or journal or to seek specific information,
- The information problems faced include communication and delays in delivery, lack of expertise available on certain subjects and inadequate services/facilities,
- Respondents suggested ways to solve some of their information problems through development of CEHANET and improvement of document delivery services in WHO.

No discussion followed this paper.

#### **5.7 "Role of National Information Systems in CEHANET", by Dr N. Al-Shorbaji**

The nature and structure of CEHANET were presented. CEHANET is a decentralized, mission-oriented regional information network. Advantages and disadvantages of centralization/decentralization were given. The paper emphasized that CEHANET will keep contact with all potential collaborating centres and let this procedure develop until one coordinating centre be designated in each country for direct contact. The criteria for selecting a national collaborating centre were given as availability of EH personnel and activities, library/information resources and willingness for commitment to CEHANET.

The role of a national collaborating centre was also shown: documents selection and processing, assisting in EH personnel directory, promotion of CEHANET products and services, and seeking feedback from users.

At a later stage CEHANET will go for one national cooperating centre. The criteria for its selection are: availability of EH personnel and activities, availability of library/information infrastructure and commitment to CEHANET procedures and policies.

The role of such a centre will include: coordination with other centres, creation of EH national data bases, promotion and supply of CEHANET services and products, study of information needs in the country and seeking feedback for the development of services.

The discussion that followed concentrated on:

- Whether, as decentralized system, CEHANET will collect documents from national collaborating centres or collect bibliographic data or documents for its regional EH data base,
- The number of collaborating/cooperating centres in each country,
- Collaboration with the Ministry of Health in each country,
- The role of the WHO Representative in the collaboration,
- Developing the system gradually and the principle of evolution: start small and develop,
- Strengthening of CEHA Documentation Unit as the major component in the network,
- National collaborating centres should not compete to achieve the criteria wanted. They should be helped by CEHA.

#### **5.8 "On Cooperation between National Information System of Jordan and CEHANET", by Dr Y. Nusseir**

The paper presented briefly the establishment, development and structure of NIS. The services to be provided by the system and target users were shown. A plan for implementation of the system was put forward. Activities of the CSD in RSS which include consultancy services, in-house computer services, training services and library services. Staffing for the system was also shown.

Areas for cooperation between NIS and CEHANET proposed were:

- Assessment of needs and resources,
- Development of the systems,
- Seminars and training courses,
- Promotional activities,
- Standards and tools,
- Collection and dissemination of information,
- NIS/STIC could act as the local node in CEHANET to use the resources available in EH and WS & S.

**5.9 "Towards Developing a National Specialized Network in the Area of Environmental Health", by Dr C. Wesley**

The paper presented the basic considerations for developing a national specialized network in EH. These considerations included:

- Identification of available needs,
- Surveying of information needs.

A questionnaire was developed for the purpose. A formal structure, showing responsibilities of a specialized network, a focal point and a coordinating committee were proposed. Required support at a national level and the basic infrastructure needed were outlined. Some suggestions were given to ensure active participation and optimum cooperation and interaction between the different components of the network.

**5.10 "SYRISNET and CEHANET: Areas for Cooperation", by Dr H. Harfoush**

The paper presented a definition of the Syrian Information Systems Network and its state of development. As the whole system is in its infancy, its initial objectives are:

- The assignment of appropriate priority to the project and the establishment of a national coordinating centre,
- Implementation of a few pilot information systems for the government.

Some activities have been performed for the promotion and use of some CEHANET services in Syria. Some contacts have been made with EH organizations to facilitate their use of CEHANET services. A number of organizations were identified as potential collaborating centres in the network. Planned services include:

- Survey of WS & S documents in the country,
- Staffing of the National Coordinating Centre,
- Training of documentalists,
- Use of CDS-ISIS,
- EH personnel and institutions directories,
- EH bibliographies.

The paper proposed areas for cooperation between SYRISNET and CEHANET including:

- CEHANET use of the information infrastructure of SYRISNET,
- Promotion of EH information subsystem in SYRISNET,
- Creation of a pilot project for cooperation between SYRISNET and CEHANET and its use as a model for cooperation and testing,
- Use of information technology available for SYRISNET.

**5.11 "A Proposed Method of Cooperation between ARIS-NET and CEHANET", by Ms F. Zahawi**

The paper started with a brief description of ARIS-NET project which consists of three subsystems :

- National Information Systems Networks,
- Sectoral Information Systems Networks,
- Specialized Regional Information Systems Networks.

The role of ALDOC as a coordinating centre was also presented. The paper gave an account of the status of the environmental health sector in the League of Arab States (LAS) and its role in EH programmes in the Arab world and in cooperation with WHO. The EH literature and information storage and retrieval were briefly described.

The paper then outlined the areas for cooperation between ARIS-NET and CEHANET including:

- Systems and Tools,
- Bibliographic and Information Services,
- Document Delivery Services,
- Training (general and tailored programmes).

ARIS-NET envisaged cooperation with CEHANET on the basis of partnership, thus the following projects may be made available and used by CEHANET:

- Information processing manuals for bibliographic and non-bibliographic applications,
- Thesauri,
- A master plan for data base development,
- Directory of information and documentation centres and data banks in the Arab World,
- Alternative document delivery systems,
- Audio-visual training kits, (when they are ready)
- User education programmes,
- Use of telecommunication services available for ARIS-NET.



### **5.12 "Systems and Tools for CEHANET", by Mr H. Itayem**

The paper presented a definition of systems and tools and their role in documentation and information systems. A review of the software available for use in CEHANET system was given including software for micros, minis and mainframes. The extent and problems of their use in the Region were also shown. The tools needed for operating information systems were presented including: cataloguing rules and classification schemes, thesauri for subject analysis and the format needed for communication and data transfer, in addition to the procedures manuals in Arabic and English.

The discussion that followed centered on:

- Systems and tools which are most appropriate for CEHANET,
- Arabization of systems and tools,
- Use of such systems and tools by CEHA and the national collaborating centres,
- International standards used in the field.

### **5.13 "CEHA Documentation Services: Technical Processes, Services and Training Programmes", by Dr H. Al-shorbaji**

The role of CEHA Documentation Service in CEHANET was presented as being a channel for information from WHO and other bodies and as the coordinating body of the network. A brief description of its development and the systems and tools used were given. A plan for development of the service to enable it to play its assigned role was put forward including:

- Collection development and document selection policy,
- Collection management and organization: cataloguing, classification, indexing and abstracting,
- Staffing and training,
- Bibliographic data bases,
- Non-bibliographic data bases,
- Services,
- Automation,
- Training of documentalists at National Collaborating Centres.

The discussion that followed concentrated ways of on strengthening the services to facilitate network development and adaptation of systems and tools for CEHA to be used after testing by other national centres.

**5.14 "A Programme of Training and Manpower Development for CEHANET", by Mr A. R. Khamaruddin**

The paper emphasized the value of training of personnel in the system. The right people with the right training result in good services and efficiency. Training should aim at promoting cooperation in the Region and help to build the information infrastructure. Trainees in the system include personnel from both CEHA staff and the National Collaborating Centres. The constraints in manpower development were presented including: rapid developments in information technology, the interdisciplinary information science, technicality of EH field, information processing tools, systems and standards, unawareness of information resources available, and shortage of trained personnel to do the training.

The paper defined a strategy for manpower training and development for CEHANET. This strategy depends on the quality of programmes which are designed for training and the proposed venues for training were listed.

The paper defined the staffing patterns for CEHA, as a coordinating centre of the network, and for the National Collaborating Centres.

The discussion that followed concentrated on the available resources for CEHANET to allow for staffing and training as proposed in the paper. The speaker made it clear that what he proposed is the minimum requirements for staffing. CEHA should make the effort to find resources to allow for that.

Staff motivation was an issue as far as the National Collaborating Centres are concerned.

The services proposed in the project need more staff than have been already recruited. Without well-trained and the right staff nothing can be done.

The right people from the National Collaborating Centres should attend the planned workshops and training courses.

**5.15 "A Statement on MINISIS Developments", by Mr A. Terjanian**

The statement briefly reviewed the IDRC's policies in developing and distributing MINISIS. The decentralization approach is used in dissemination and support of MINISIS. The technical development suggested through MINISIS user groups in the world will be incorporated. Probably the most single development planned is the use of C language which will free MINISIS from machine-dependency on HP-3000 series.

## 5.16 Country Reports

The coverage and comprehensiveness of the papers presented varied. Uniformity of style was absent from among them, but for oral presentation some guidelines were distributed before the country reports session. Two participants did not submit country reports: Jordan and Syria, although the former made oral presentations.

### 5.16.1 "Kabul Authority for Water Supply and Sewerage (KWAS)", by Mr A. Nasseri

The paper traced the establishment and development of KWAS and its structure. It also presented information on the water supply system in the city and reviewed KWAS personnel and staffing situation: showing that 270 are at work there, out of whom there are 46 engineers and technicians. Problem areas in relation to water works economy were also mentioned.

### 5.16.2 "Government of the State of Bahrain: Functional Responsibilities in the Field of Water and Sanitation", by Mr S. E. Al-Binali

The paper stated that the Government of the State of Bahrain is fully responsible for water supply and sanitation systems in the country. It listed the various organizations involved in water supply, as well as sanitation organizations. The public health situation was briefly presented. The paper mentioned the information centres that hold EH and WS & S data in the country. A brief review of the background and historical development was given. The paper included full statistical data on population and water consumption forecasts for the years 1986-2001.

### 5.16.3 "Country Report of Cyprus", by Mr S. Anthousis

A brief description of the Island was given. The EH situation was presented including the recommendations of the Environmental Action Programme for Cyprus, with a recommendation that a simple environmental health information system be introduced. The paper presented the activities of the Department of Medical and Health Services on Environmental Health Sanitation which include: water supplies, sea pollution monitoring, swimming pools, sewerage system, refuse, building permits, livestock premises, control of insects of medical importance, cemeteries, inspection of public buildings, food control, health education, antimalarial and man-power utilization.

5.16.4 "Egypt : Country Report", by Mr M. H. Nassery

The paper stated that EH information systems and libraries in Egypt are linked to agencies concerned with EH. Such agencies include:

- Government agencies which consist of the Ministry of Health and the Environmental and Occupational Health Centre. The Centre's main objective is to provide Egyptian scientists with access to information on effects of toxic chemicals. It also aims at establishing computer data bases and building a library collection on the subject. Other ministries also have an interest in EH and pollution control,
- Planning agencies,
- Specialized research centres and institutions.

5.16.5 "Jordan" by Mr M. Dajani

The brief presentation showed that EH activities in Jordan are scattered among various government and semi-government organizations. Some of them are concerned with public health and pollution, like the Ministry of Health, others are concerned with water supply and sanitation, and pollution problems involved, like the Ministry of Water and Irrigation, while other organizations are interested in drawing up standards, laws and regulations in EH, their follow-up and implementation. The speaker left it for RSS to give details on scientific and technical information systems.

5.16.6 "Iraq : Country Report", by Mr N. H. Al-Shakarachi

The brief presentation showed that there is no central body responsible for EH in the Country. Each ministry was said to have a section or department for EH activities. Among the most interested ministries are: Ministry of Health, Ministry of Irrigation and Agriculture, Ministry of Industries, Standards Department and Departments of EH and WS & S at the Universities. There is no central information system, responsible for EH information. The paper also listed the WS & S authorities and their functions.

5.16.7 "Environmental Health Information Services, Lebanon",  
by Mr A. Baltagi

A description of the country and the current political, economic and social conditions and their effect on EH were presented. The paper mentioned the areas where there is environmental health concern and the main pollution sources of the environment in Lebanon: air pollution, marine pollution, sewage disposal and refuse disposal. The water supply and demand situation as well as the efforts of international organizations and foreign aid to WS & S were presented. The paper made recommendations including: human resources development and support for the establishment of EH information systems.

5.16.8 "Development of Systems of Information in Sanitary and  
Environmental Engineering in Morocco", by Dr S. Naji

The paper discussed the importance of information availability in EH fields. The development of information systems within the university system was described. A full description of the process of information systems in EH was also given. The WHO efforts in this process were illustrated. The role of the National Centre of Documentation (CND) was presented in addition to details of the computer and communication facilities available. The establishment of the NCSE as a specialized centre in EH was considered as a major factor in the exchange of EH information in Morocco.

Collaboration between NCSE, CND and CEHA had been promoted and was welcomed.

5.16.9 "A Paper on Information Systems for Water and Sanitation  
in Oman", by Mr A. M. Al-Rashdy

The paper identified ten ministries, councils and other government agencies interested in information on WS & S. A full description of four of them was presented as being the most prominent in the field. Their information systems and library services were presented. The organizations are :

- The Council for the Conservation of the Environment and Water Resources,
- Ministry of Environment and Water Resources,
- Ministry of Health,
- Sultan Qaboos University,

The paper identified the problem areas and the constraints existing in the EH information situation as being:

- Absence of a national information system,
- Lack of library/information infrastructure at ministries and governmental agencies,
- Lack of coordination between the various EH agencies and their information services,
- Absence of a national information policy,
- Lack of awareness.

The paper concluded that CEHANET was seen as a good base for information provision in the Region which would strengthen technical cooperation between countries. Oman pledged support and cooperation with CEHANET.

5.16.10 "Pakistan: Country Report", by Mr A. Q. Qureshi

The paper presented a description of Pakistan including the geography, administration, population, urban areas, environmental problems, health problems and IDWSSD activities. The development plans were also reviewed with particular reference to health care, environmental protection and water supply and sanitation. Special emphasis was put on the environmental health information system in Pakistan. The paper claimed that no universal mechanism for information transfer can be suitable for all the conditions and needs of various countries. The paper defined areas for cooperation in information exchange and document supply. The WHO recommendations for the development of library services were adopted in the paper including:

- Development of standard basic libraries,
- Expansion of scale of distribution of publications,
- A commercial approach for information transfer.

The paper pointed out the areas in which various government agencies might cooperate with CEHANET. CEHANET should look into the possibility of giving support to national centres and the designation of focal points.

5.16.11 "Somalia : Country Report", by T. A. Abidi

The EH situation and the agencies responsible for it were presented. The General Directorate of Preventive Medicine in the Ministry of Health was mentioned as the coordinating body of EH in the country. The use of mass media was emphasized to channel EH information to the public. The constraints facing information exchange are: insufficient trained manpower and shortage of resources (materials and money).

CEHANET was seen as a viable effort to facilitate information exchange in the Region.

5.16.12 "Sudan : Country Report", by Mr J. Z. Boutros

The paper listed the organizations responsible for WS & S sector in Sudan including: Ministry of Energy and Mining, Ministry of Health, Ministry of Housing and Public Utilities. The activities and staffing of the National Corporation for Development of Rural Water Resources were described, the National Urban Water Corporation and the organizations responsible for rural and urban sanitation were also described. Standards and quality control of drinking water, and the role of WHO were briefly discussed. Institutions responsible for training and research were listed and a brief description was presented.

The paper presented the library and documentation services in the field of EH and WS & S. Three major venues were given: National Documentation Centre of the NCR, National Health Laboratories and Wad El Magboul Training Institute.

5.16.13 "Syria", by Mr S. Shawaf

A brief presentation was given, showing that the EH activities are scattered among various government organizations: Ministry of Health, Research Centres, Ministry of Irrigation, Water Authorities, Ministry of Industry, Ministry of Petroleum and Mineral Resources and the universities and Marine Research Centres. The newly established Ministry of Environment had been given the role of coordinating the activities of various organizations. As for the information services, each agency had its own system with no coordination. It is hoped that the planned SYRISNET will have a vital role in this respect.

5.16.14 "The Environmental Health in the Yemen Arab Republic",  
by Mr H. A. Al-Gunied

The paper presented the various environmental health components and the EH problems involved. The programmes involved in EH and WS & S were presented including:

- Urbanization,
- Water Supply and Sanitation,
- Sewage disposal,
- Refuse and soil wastes,
- Meteorological services,
- Food hygiene, control and safety.

The paper also presented the EH management and organization structure, pointing out the organizations which held responsibility for EH and WS & S, and the tasks that they should perform. A lengthy presentation of environmental pollution and health services was given.

5.16.15 "Country Report : People's Democratic Republic of Yemen"  
by Dr A. Basahai

The paper emphasized the Government's commitment to supplying water and sanitation services. A description of the various projects, and the collaborating efforts of some international organizations was given.

The central government recognized the importance of the availability of information in the field of EH, WS & S and public health. The paper showed that due to the lack of coordination of the activities of agencies active in the EH fields, the National Council for the Protection of the Environment was formed as a coordinating body. The Secretariat of the Council was seen as the focal point for EH information from all sources at the national level.

5.16.16 Conclusion and Discussion

From the 15 country presentations the following conclusions and issues for discussion emerged:

- The role of the Ministries of Health in EH information exchange vs. other organizations, and the best methods for coordination;
- The role of WHO Representatives and country engineers as agents for CEHANET services;
- Some papers presented the EH/WS & S situation with no reference to information exchange activities, while others put some emphasis on this aspect;
- EH activities were dispersed and scattered in the countries. Among the most popular organizations were: Ministries of Health, Ministries of Water and Irrigation, Ministries of Public Works, National Laboratories, Scientific Research Centres;
- Information components in EH and WS & S in the organization were poor or did not exist, and when they exist, coordination among them is missing;
- It was made clear that there is a need for CEHANET as a Regional Information System and countries supported the idea and committed themselves to cooperation;
- Some papers limited themselves to the topics of water supply and sanitation while others dealt with the environmental health situation with some emphasis on WS & S.



## 6. WORKING GROUPS

**6.1 Four working groups were formed to make recommendations on the following:**

- a) Services
- b) Systems and Tools
- c) Staffing and Training
- d) National Collaborating Centres

Participants from EMR Member States joined the groups of their choice. Annex IV lists the membership of each group.

Each group presented a report to the final plenary session for approval. The final version of the four reports is the subject of Annex V, while the following is a summary of the recommendations submitted:

### 6.2 Services

The first phase of CEHANET should be concerned with WS & S servicing national, public, and private WS & S institutions and with development and research centres. Furthering its concern with EH will be the target for the second phase, following a review of the progress achieved.

The initial services should include the following:

- a) Production of the following, in both Arabic and English where possible:
  - Information bulletin,
  - List of national and international technical documents,
  - Bibliographies on specific topics,
  - Prototype promotional brochures,
- b) Operating an efficient document delivery service,
- c) Identifying and assessing national centers to develop technical information exchange services,
- d) Providing methodologies for developing national information services,
- e) Stimulate awareness for the need for information amongst EH personnel.

The services should initially be free of charge but levying charges later should not be precluded. Fostering the gradual promotion of the services should be based on needs surveys and other personal contacts.

### **6.3 Systems and Tools**

#### **a) Systems**

CEHA should expand two of its existing microcomputers for both running and back-up of CDS/ISIS system. Moreover it should acquire a multiuser microcomputer of more advanced technology, preferably with UNIX operating system. National centres should strive to achieve maximum compatibility with CEHA as CEHANET coordinating centre, by using CEHANET specified codes, formats and data structure. Those already possessing incompatible computer systems should provide the necessary programmes for data conversion locally where possible.

All CEHANET Arabic products should conform with ASMO standards.

#### **b) Tools**

CEHA should stick to its present workplan for Arabizing the Interwater Thesaurus which has to be adopted by all CEHANET partners. Arabized international standard bibliographic description and cataloguing rules should be adhered to.

CEHA should prepare the format for data elements and the required manual. Moreover, CEHA should cooperate with all parties concerned in the Region for creating, developing or adapting the various manuals, standards and guidelines required for CEHANET.

### **6.4 Staffing and Training**

Appropriate staffing, both quantitatively and qualitatively, and training for all CEHANET partners are essential for the success of the network. The minimum number of staff required during the next five years should be recruited.

The group made it clear that the present staffing situation is not enough and efforts should be made to fill the posts identified for the project. A lengthy discussion took place comparing services proposed in the workplan with the manpower available. It was concluded that with the present staffing situation it would be difficult to establish a network.

CEHANET should cater for sensitizing both users and top management, using the various means possible.

The first CEHA workshop on CEHANET procedures is a useful introductory course. Subsequent courses must be specialized intensive courses. Moreover, fellowships should be provided for practical on-the-job training at advanced centres, particularly for those to be trained as trainers.

## **6.5 National Centres**

CEHANET should have national collaborating centres as partners in accordance with a set of criteria and defined roles. One of these centres should be later designated as national coordinating centre, provided that it meets the prescribed criteria, and commits itself to the defined tasks.

The role of WHO Representatives and sanitary engineers in member states should be agreed upon among the parties concerned.

CEHA should support national collaborating and coordinating centres.

## **7. CONCLUSIONS AND RECOMMENDATIONS**

Those who attended the Advisory Group Meeting on Information Exchange in Water Supply and Sanitation (Amman, 7-10 December 1987) have expressed encouraging remarks on the steps that have materialized in this short period towards the construction of the network. Moreover, the willingness to cooperate has been prevalent amongst the various participants, although the limited resource allocations are still a matter of great concern. Thus the project should start small and develop, provided that adequate executive powers are delegated to CEHANET Coordinating Centre to enable the timely implementation of the set plan.

The Meeting was able to achieve consensus on the conclusions on systems and tools to be used by CEHANET and the urgent need for their arabization was confirmed. Emphasis was put on developing CEHA capacity to enable it to act as the Coordinating Centre of the Network. Services should be limited to the more needed ones and on a selective basis at this stage. To create the Network, staffing and training requirements for CEHA and the national centres should be seriously considered. Cooperation and collaboration with EH and WS & S institutions should be based on assessment of needs and evaluation of available resources.

The present project phase will include the required planning and fund raising for the deliberate professional operation of the second phase: the most important element, without which the success of the project will be jeopardized.

Annex I

**FIRST CONSULTATIVE GROUP MEETING  
ON CEHANET  
ANNEX 6 - 8 JUNE 1988**

**PROGRAMME**

Monday 06 June 1988

08:30 - 10:00	Registration
10:00 - 10:30	Inauguration - RD Message - Welcome address by H.E. Dr Zaid Hamzeh Minister of Health
10:30 - 11:00	Coffee break
11:00 - 11:15	Purpose of the Meeting by Dr Akmanoglu, CEHA Coordinator
11:15 - 11:30	Introduction of Participants
11:30 - 11:45	Election of Officers and Review of Programme
11:45 - 12:45	- The WHO Library and the Information and Documentation Services by Ms A. Pfister, WHO/HQ  - Library Services at EMRO by Mr G. Guirguis, WHO/EMRO
12:45 - 13:00	Discussion
13:00 - 14:00	Lunch break
14:00 - 14:30	Brief Presentation of CEHANET Project and Workplan 1988/1989, by Dr N. Akmanoglu, CEHA Coordinator
14:30 - 15:00	Discussion
15:00 - 15:30	CEHANET Information Services by Dr N. Al-Shorbaji, STC, CEHA
15:30 - 15:45	Discussion
15:45 - 16:00	Coffee break
16:00 - 17:00	Needs Assessment/Market Analysis (for CEHANET) by Mr Van Damme, IRC/CWSS

17:00 - 17:30 Discussion

17:30 - 18:00 A Trial Survey on Information Needs in  
EMR, by Dr N. Al-Shorbaji, STC/CEHA

Tuesday 07 June 1988

08:30 - 09:00 Role of National Information Systems in  
CEHANET by Dr N. Al-Shorbaji, CEHA

09:00 - 09:45 Discussion

09:45 - 10:45 Country reports by participants

10:45 - 11:00 Coffee break

11:00 - 14:30 Country reports by participants  
(continued)

- On Cooperation between National  
Information System of Jordan and  
CEHANET, by Dr Y. Nusseir, RSS, Jordan
- SYRISNET and CEHANET : Areas for  
Cooperation by Dr N. Harfouch, SSRC,  
Syria
- Towards Developing A National Specialized  
Network in the Area of Environmental  
Health by Dr C. Wesley, NRC,  
Sudan

14:30 - 15:00 Lunch break

15:00 - 15:25 A Proposed Method of Cooperation between  
ARISNET and CEHANET by Ms F. Zahawi,  
ALDOC

15:25 - 16:00 Systems and Tools by Mr M. Itayem

16:00 - 16:20 CEHA Documentation Service: Technical  
Processes, Services and Training Pro-  
grammes by Dr N. Al-Shorbaji, STC, CEHA

16:20 - 16:40 Coffee break

16:40 - 17:20 A Programme of Training and Manpower  
Development, by Mr M. Khamaruddin

17:20 - 17:30 A Statement of MINISIS Developments by  
Mr A. Terjanian, IDRC

17:30 - 18:00 Discussion

Wednesday 08 June 1988

08:30 - 10:30

Working Groups

1. Services
2. Systems and Tools
3. Staffing and Training
4. National Cooperating Centres

10:30 - 10:45

Coffee break

10:45 - 13:00

Conclusions and recommendations

13:00 - 14:00

Adoption of recommendations

Annex II

**FIRST CONSULTATIVE GROUP MEETING  
ON CEHMET  
AMMAN 6 - 8 JUNE 1988**

**LIST OF PARTICIPANTS**

AFGHANISTAN	Eng. Azizullah Nasserri, President of Kabul Authority for Water Supply and Sewerage, <u>KABUL</u>
BAHRAIN	Mr Saif E. Al-Binali, Director of Water Supply, Ministry of Works Power and Water, <u>MANAMA</u>
CYPRUS	Mr Sophocles Anthousis, Senior Health Inspector, Dept. Medical & Public Health Services, <u>NICOSIA</u>
DEMOCRATIC YEMEN	Dr Ahmed Abdulla Basahai, Director of Preventive Medicine, Public Health Professional Ministry of Public Health, <u>ADEN</u>
EGYPT	Mr Mohamed H. Nassery, Imbaba Environmental Care, Ministry of Health, <u>CAIRO</u>
IRAQ	Eng. Ni'amh H. M: Al-Shakarchi, Director of Environmental Engineering Section, Ministry of Health, <u>BAGHDAD</u>

JORDAN  
Mr Mohamed Dajani,  
Ministry of Health,  
AMMAN

LEBANON  
Eng. Abdullah Baltaji,  
Act/Chief Sanitary Engineering Dept.  
Ministry of Health & Social Affairs,  
BEIRUT

MOROCCO  
Mr Naji Said,  
Associate Professor,  
Mohammadia School of Engineering,  
RABAT

OMAN  
Mr Ali Bin Mohammed Al-Rashidy,  
Act. Head Environmental Health,  
Ministry of Health,  
MUSCAT

PAKISTAN  
Mr Abdul Qayum Qureshi,  
Deputy Chief,  
Planning and Development Division,  
Government of Pakistan,  
ISLAMABAD

SOMALIA  
Dr Tirike Awil Abdi,  
Head Environmental Health,  
Ministry of Health,  
MOGADISHU

SUDAN  
Dr Joseph Zaki Boutros,  
Deputy Director,  
National Chemical Laboratories,  
Ministry of Health,  
KHARTOUM

SYRIA  
Eng. Saad Allah Al-Shawaf,  
Director of Water Pollution Control,  
Ministry of Irrigation,  
DAMASCUS



YEMEN ARAB REPUBLIC

Mr Hussein Alawi El-Guneid,  
Assit. Director of Preventive  
Medicine,  
Environmental Health and  
Occupational Health,  
Ministry of Health,  
SANA'A

**OBSERVERS**

Dr Mohammed Khudair,  
Chief Environmental Health,  
Ministry of Health,  
Amman

Mr Akram Juneidi,  
Director Information Department,  
Ministry of Water and Irrigation/  
Water Authority of Jordan,  
Amman

Mr. Zakaria Haj Hamad,  
Data Base Manager,  
Abdul Hamid Shoman Foundation,  
Amman

**SECRETARIAT**

1. DR N. O. Akmanoglu, Coordinator, CEHA
2. Mr Hans Bahr, Sanitary Engineer, CEHA
3. Dr Najeeb Al-Shorbaji, Consultant, CEHA
4. Ms A. M. Pfister, WHO/HQ
5. Mr G. Guirguis, WHO/EMRO
6. Mr J. M. G. Van Damme, Director, IRC/CWS, The Hague,  
The Netherlands
7. Mr Abdul Rahman Khamaruddin, Temporary Adviser, UNESCO  
Consultatnt
8. Dr Cecil Wesley - Temporary Adviser - Sudan
9. Ms Faria Zahawi - Temporary Adviser - Tunisia
10. Mr Mahmoud Itayem - Consultant - Jordan
11. Dr Nabil Harfouch - Temporary Adviser - Syria
12. Dr Yousif Nusseir - Temporary Adviser - Jordan
13. Mr A. S. R. Terjanian - IDRC/Cairo

Annex III

**LIST OF DOCUMENTS**

1. Agenda
2. Programme
3. List of Participants
4. Technical Note
5. Message from the Regional Director
6. Welcome address by H. E. The Minister of Health
7. Terms of Reference for the Groups
8. Report of the Working Groups of the Advisory Group Meeting, Amman, 7-10 December 1987
9. Introducing CEHANET (English and Arabic)
10. What is CEHA (English and Arabic)
11. First Regional Workshop on CEHANET Procedures
12. The WHO Library and the Information and Documentation Services by A. M. Pfister
13. Library and Documentation Services in EMRO by Mr G. Guirguis
14. Brief Presentation of CEHANET Project and Workplan for 1988/1989 by Dr N. O. Akmanoglu
15. CEHANET Information Services by Dr N. Al-Shorbaji
16. Needs Assessment/Market Analysis (for CEHANET) by Mr J. M. G. Van Damme
17. A Trial Survey on Information Needs in EMR by Dr N. Al-Shorbaji
18. Role of National Information Systems in CEHANET by Dr N. Al-Shorbaji
19. Systems and Tools by Mr M. A. Itayem
20. On Cooperation between National Information System of Jordan and CEHANET by Dr Y. Nusseir
21. Towards Developing a National Specialized Network in the Area of Environmental Health by Dr C. Wesley

22. SYRISNET and CEHANET: Areas for Cooperation by Dr N. Harfoush
23. A Proposed Method of Cooperation between ARIS-NET and CEHANET by Ms F. Zahawi
24. CEHA Documentation Service: Technical Process, Services, and Training Programmes by Dr N. Al-Shorbaji
25. A Programme of Training and Manpower Development for CEHANET by Mr A. R. Khamaruddin
26. A Statement on MINISIS Developments by Mr A. Terjanian
27. Sudan: Country Report by Mr M. J. Boutros
28. Lebanon: Environmental Health Information Services by Mr A. Baltagi
29. Egypt: Country Report by Mr M. H. Nassery
30. The Environmental Health in the Yemen Arab Republic by Mr H. A. El-Guneid
31. Development of Systems of Information in Sanitary and Environmental Engineering in Morocco by Dr S. Naji
32. Pakistan: Country Report by Mr A. Qayyum
33. Kabul Authority for Water Supply and Sewerage (KAWS) by Mr A. Nasserri
34. Bahrain: Functional Responsibilities in the Field of Water and Sanitation: Report by Mr S. E. Al-Binali
35. Country Report of Cyprus by Mr S. Anthousis
36. Somalia: Country Report by Dr T. A. Abidi
37. A Paper on Information Systems for Water and Sanitation in Oman by Mr A. M. Al-Rashdy
38. Country Report: People's Democratic Republic of Yemen by Dr A. Basahai
39. Iraq: Country Report by Mr N. H. Al -shakarachi
40. Guidelines for Oral Presentation by Country Representatives

ANNEX IV

GROUP MEMBERSHIP

Services

Mr. Van Damme  
Mr. G. Guirguis  
Mr. A. Junaidi  
Mr. M. Dajani  
Mr. A. Baltagi  
Mr. A. Qureishi

Systems and Tools

Mr. M. Itayem  
Dr. Y. Nusseir  
Ms. A. Pfister  
Mr. A. Nasser  
Mr. S. Shawaf  
Dr. N. Akmanoglu  
Mr. Z.H. Hamad  
Dr. N. Harfouch

Training and Staffing

Mr. A. R. Khamaruddin  
Mr. A. Terjanian  
Mr. N.H. Mahmoud  
Mr. S. Anthousis  
Mr. S. Albinali  
Mr. H. El-Guneid  
Dr. A. Basahai

National Collaborating Centres

Dr. N. Al-Shorbaji  
Ms. F. Zahawi  
Dr. C. Wesley  
Mr. J. Boutrous  
Dr. S. Naji  
Dr. M. Khudeir  
Mr. M. Nassar  
Mr. T.A. Abidi  
Mr. Al-Rashidy  
Mr. H. Bahr

Annex V

**REPORTS OF THE WORKING GROUPS**

**I. SERVICES**

**PREAMBLE:**

1. It is conceived that CEHANET would develop in two stages. Stage one, would be concerned with water supply and sanitation. Stage two would further include environmental health following a review of the progress achieved within the first stage, possibly after two years.

Phase one would be mainly directed to the development of the internal infrastructure of CEHANET and the services filled out from its headquarters, as follows:

1.1. Target Institutions:

- Water Supply and Sanitation institutions at governmental level, in the private sector, and the development and research sector,
- Once these institutions have been identified, they would constitute the target group for CEHANET services,
- CEHANET is to further carry out surveys for the identification of the information needs of groups at different levels of responsibilities (both urban and rural).

1.2. In order to effect an efficient service it is essential that CEHANET build up its physical and manpower resources. Part of CEHA's manpower should allot sufficient time for building up information resources.

1.3. Issue an information bulletin-cum-newsletter, to include information on new publications and documents, as well as contain briefs on developments in the field. Availability of training opportunities may form a standing feature of this bulletin.

1.4. Issue a list of technical documents as issued by WHO and other national and international organizations in the water supply and sanitation sector.

1.5. Compile bibliographies on specific topics of interest.

1.6. Publish prototype promotional brochures, to be further adapted at national levels.

1.7. Operate an efficient document delivery service, primarily based on articles in relevant periodicals. The feasibility of purchasing back issues of relevant periodicals in microform could be investigated. The pooling of resources with other international, regional and national bodies should also be explored.

1.8. Identify centres requiring assistance in the development of their information structure. Assistance to the centres could be considered in the form of in-service or even group training, consultation, etc.

1.9. The language requirements of users should be the guiding principle in CEHANET publications. As much as feasible, these publications should be published bilingually in Arabic and English.

1.10. At the initial stage of CEHANET's operation, the services would be rendered on a demonstrational basis, free of charge to qualified users. At a later stage when the demand increases, the levying of a charge would not be precluded. Private sector should be asked to meet the cost of the service.

1.11. It is recommended that CEHA should find ways and means of securing a feedback on water supply and sanitation activities from national levels. This is essential for the exchange of experiences and relevant information.

1.12. Stimulate awareness and provide methodologies for developing national information data bases, including the collection and reporting of relevant data.

1.13. The gradual promotion of CEHANET's services should be fostered primarily through needs surveys and other personal contacts.



## II. SYSTEMS AND TOOLS

### 1. SYSTEMS

At this stage the performed approach was to consider the requirements of the coordinating centre of CEHANET separately from the requirements of the collaborating centres, while emphasizing compatibility and transport requirements between all centres.

#### 1.1 **CEHANET Coordinating Centre**

After reviewing the existing computer facilities at CEHA the group recommended:

- 1.1.1. Limit the spending on the existing machines to the requirements for running CDS/ISIS on the library computer and to upgrading a second machine to have the same capabilities for use as a back-up machine,
- 1.1.2. Acquire a multi-user microcomputer of more advanced technology with the necessary peripherals, including intelligent terminals (microcomputers), printers and communications gear, and capable of running Arabic/Latin applications,
- 1.1.2. The operating software should be preferably UNIX,
- 1.1.4. The applications software should include a relational DBMS (e.g. ORACLE) with bilingual capability,
- 1.1.5. All Arabic products should conform to the ASMO standards,
- 1.1.6. CEHANET should ensure transferability of data from collaborating centres to its system, using local facilities,
- 1.1.7. CEHANET should specify standard formats, code sets and data structures.

It is recommended that the format chosen be compatible with CCF, the code sets used be ASCII for Latin data, and conform to ASMO for Arabic data.

#### 1.2 **CEHANET Collaborating Centres**

To allow for maximum flexibility and market availability in the various countries of the EMR the group recommended:

- 1.2.1. The collaborating centres should strive to achieve maximum compatibility with CEHANET coordinating centre hardware and software as far as possible using CEHANET specified codes, formats and data structures,
- 1.2.2. Centres already possessing computer equipment differing from CEHA's configuration should attempt to provide the necessary data conversion locally where possible.

### **1.3 Action Required and Distribution of Roles**

- 1.3.1. Upgrading two of the existing machines to facilitate running CDS/ISIS,
- 1.3.2. Set detailed specifications for the multiuser system (hardware and software) described in (1.1),
- 1.3.3. Float a tender for the acquisition of the system,
- 1.3.4. Evaluation of offers and selection of the system supplier,
- 1.3.5. Installation and operation of the system,
- 1.3.6. Appropriate training of CEHA staff on the operation and use of the system,
- 1.3.7. Connection of the older machines to the multiuser systems should be considered when appropriate,
- 1.3.8. Distribution of the specifications of CEHANET's configuration (including codes, formats, data structures, used storage media etc.) to collaborating centres in the Region.

## **2. TOOLS**

### **2.1 Cataloguing**

As this process is catered for at the international level through the international standard bibliographic descriptions (ISBDs) developed by IFLA and Arabized by ALECSO, CEHANET is urged to follow these tools. ALDOC is requested, as ARIS-NET coordinator, to look after the revision and updating of such tools as they are developed by IFLA. AACR2 is identical with ISBDs in the descriptive part, and should also be used for rules of entries.

### **2.2 Classification**

EH specialized centres are recommended to use IRC classification scheme. WHO, in collaboration with IRC, CEPIS, PEPAS and CEHA are to look into the expansion of the scheme to cover the various fields of environmental health.

Numerical notation, as an international language, has to be used in the expanded scheme.

### **2.3 Indexing and Thesaurus**

- 2.3.1. Interwater thesaurus should be adopted by CEHANET. The Group has noted that its Arabization is among the project activities, and recommends that this task should be accomplished according to the workplan, prior to holding the First Workshop for CEHANET Procedures in November 1988,

- 2.3.2. The manual for the CEHANET Format should provide for using the thesaurus and indexing procedures,
- 2.3.3. As the network requires identical system language, all CEHANET centres should adhere to the Interwater Thesaurus. CEHA should not allow any local modifications, as this has to be done centrally in cooperation with IRC. The use of the thesaurus may require some reprocessing at some national centres already using different tool,
- 2.3.4. The Arabization of Interwater Thesaurus should be carried out using MINISIS. CEHA has to approach Shoman Foundation, the only MINISIS user in Jordan, for this. If not possible ALDOC should be asked to carry out the task.

## **2.4 Services Manuals**

- 2.4.1. The Group draws the attention of CEHA and national centres, to the need for service manuals, to be prepared for both professionals who run the centre, and users. CEHA should help national centres to develop them making use of similar manuals available elsewhere,
- 2.4.2. Guidelines on some basics in documentation and information, such as collection, development and selection of materials, and conducting user surveys are required. CEHA should cater for such requirements,
- 2.4.3. CEHA should prepare a manual for interchange of information among CEHANET centres. This manual should define conditions, obligations and implications.

## **2.5 Authority Files**

CEHA should cooperate with its national centres as well as other national and regional centres in constructing authority files of names of persons and corporate bodies for everybody's benefit.

## **2.6 Other Tools**

- 2.6.1. CEHA is advised to contact ALDOC as ARIS-NET coordinator for developing filing rules as a basic tool for both networks, noting that no uniform rules are available in the Region. In these rules, both manual and automated systems should be taken into consideration.
- 2.6.2. In the absence of standards, particularly for translation, CEHA is advised to contact ASMO, ALDOC and/or ALECSO to prepare such requirement for the benefit of the whole Region. These Arab organisations could approach donor agencies (e.g. IDRC) for financing a project for this purpose.

### III. STAFFING AND TRAINING

#### 1. INTRODUCTION

The group considered appropriate staffing and training for CEHANET and national centres to be essential for the success of the programme. Sensitisation of users and top managers responsible for EH information programmes is also of utmost importance.

#### 2. STAFFING OF CEHANET COORDINATING CENTRE

CEHANET has made an excellent start with a modest team of part-time staff from CEHA and a documentalist and information scientist recruited as consultant. It is, however, considered essential that the staff should be increased in a phased manner over the next five years, with stress on the quality and training to the following level : (see No. 9 for job-description and qualification)

Type of Staff	1988-89	1990-93
CEHANET Coordinator	1 (25% of time)	1 (50% of time)
Documentalist	1	2
Information Officer	1	2
Library Assistant	1	1
Information Training Officer	1 (20% of time)	1 (30% of time)
System Analyst	1 (50% of time)	1

#### 3. STAFFING OF NATIONAL CENTRES

The national collaborating/focal centres should also gradually recruit/ assign at least the following staff to run their centres effectively:

Type of Staff	1988-89	1990-93
National EH information Coordinator (Head of the host institution)	1 (15 % of time)	1 (25% of time)
Documentalist	1	1
Information intermediaries (Field officers trained by CEHANET)	1 (25% of time)	2 (25% of time)
Library Assistant	1	1

#### 4. TRAINING PROGRAMME

4.1. CEHA staff responsible for CEHANET should be assigned according to the profile described under 2. They should initially undergo intensive practical training for at least one month each. This training should be arranged, as far as possible, by arrangement with the institution whose automated systems and tools CEHANET would be adapting to its needs. Example: ALDOC, WHO, IRC. Subsequently they should each be given at least 2 weeks annually of refresher training in specialised areas.

4.2. The Regional course proposed for November 1988 is a useful introductory course on CEHANET procedures and only those candidates who are actually working or designated to work in EH information field in the country should be selected for the course.

4.3. The subsequent courses must be specialised intensive courses, in topics to be selected from the attached table. It is also important to provide fellowships to the candidates participating successfully in these courses, to allow them to undergo practical on-the-job training at advanced centres; the financial resources permitting. At least one person in each country must receive such advanced training. He must also be trained to train other staff in the country. The fellowships if available from the national sources should also be used for this purpose.

4.4. The number of participants for the programmes should not exceed 25, because of the practical nature of the training. They should include the staff from national focal-centres who would be assigned to information work. They should have a degree in information science or at least two years experience in information work to be able to benefit from these workshops.

4.5. Experts for training can be drawn from ALDOC, WHO, UNESCO etc. The CEHANET staff will be associated with the international experts as under studies for these first two workshops.

4.6. Methodology: The training workshop will have presentations, demonstrations, practical exercises and hands-on training in the subjects concerned. Necessary audio-visual and computer equipment should be made available. For this purpose, the course will be conducted in association with an appropriate institution with requisite facilities. Example, RSS/Jordan, ALDOC/Tunisia, SSRC/Syria, etc.

4.7. Local EH training centres where available can also be associated with the training programmes.

## 5. OTHER TRAINING PROGRAMMES

5.1. The regional training workshop mentioned under 4 above can be recorded using AV techniques, and the recordings along with the course materials and documents properly edited, should be supplied as training kits to other national centres,

5.2. Other training programmes in the Region and outside should be constantly monitored by CEHANET, and suitable candidates sponsored to attend them by arranging fellowships. The courses to be watched are particularly those of ALDOC, RSS, UNESCO and WHO.

## 6. USER-SENSITISATION PROGRAMMES

It is equally important to organize programmes to market information services of CEHANET by sensitizing and motivating the users to seek and use its services. The sensitization programmes should not only create awareness of the information services, but should also provide training on how they can search, find and use the information from the system. For the purpose CEHANET systems and tools should be continuously improved to become more user-friendly. The following are some of the suggestions to be followed:

6.1. All EH country and inter-country programmes should be designed to have a presentation of CEHANET services.

6.2. Identify or make CEHANET friends with the necessary knowledge, conviction and involvement with CEHANET programmes in each country to speak on CEHANET to different professional groups on appropriate occasions. Such persons must be constantly informed of CEHANET activities and documentation.

6.3. Organize exhibitions, demonstrations and shows of CEHANET information resources and services on suitable occasions.

6.4. Organize two-day seminars for top managers, planners and decision makers, at national level, on CEHANET development and its use by them. Such seminars can also be organized in rural areas where the national centres find it appropriate. The costs will be borne by national centres, with expert costs if any to be borne by CEHANET.

6.5. Publicity brochures, audio-visual materials and regular features in mass media should be designed and brought out to further sensitize the public on CEHANET.

## 7. TRAINING OF TRAINERS

The main thrust of the training programme in phase 1 and 2 of CEHANET should be on the training of trainers. All the staff of the CEHANET project should be trained as trainers to carry forward the mission of CEHANET. Similarly staff trained from national centres who are identified as knowledgeable and sufficiently motivated should also be trained as trainers. These professionals should receive advanced level training for periods ranging from 2 months to 4 months both in the subject concerned and in training methodology and communication skills.

## 8. CONCLUSION

The group has set out at length the above suggestions in the belief that if the staff and training are right, if the systems are right, if the quality of information is right, and if the information is right, the services cannot be but right. If the services are right, the user-satisfaction will be the biggest inspiration for CEHANET to progress further in its pursuit for excellence.

## 9. JOB DESCRIPTION AND QUALIFICATIONS

### 9.1. CEHANET Coordinator - One (appointed from the first year) 50% of the time.

To plan, coordinate and lead the project activities. Needs extensive experience in the subject concerned within the Region. A subject specialist with aptitude for information work. Training in information science could be an asset.

### 9.2. Documentalists

To collect, process, store, create data-bases, retrieve information, and repackage where necessary to meet user needs. Degree in Information Science with at least two years of practical experience. Knowledge of the subjects relevant to CEHANET will be an asset.

### 9.3. Information Officer

To assess user needs, make field visits and answer enquiries from users based on CEHANET resources as well as external resources. Subject-specialist with training in information science, or information scientist having familiarity with the subject and having adequate experience in and aptitude for information services.

9.4. Systems Analyst

To design systems for information system applications based on the system to be adapted by CEHANET (example CDS/ISIS micro). Degree/Diploma in computer science/systems analysis, with familiarity with DBMS application. At least two years of practical experience essential.

9.5. In addition to the above, the Training Officer of CEHA should be available 30% of the time for organizing training programmes and devising training methodologies.

9.6. Library Assistant



Proposed Training Modules for Information Professionals  
in National Collaborating Centres

Training Modules	Duration of Training course (weeks)	Duration of in-house train- ing at advanced centres (weeks)
(1) Bibliographic control systems and procedures	2	3
(2) Indexing and abstracting	2	3
(3) Use of thesaurus in indexing	1	-
(4) Information selection and collection methods	1	1
(5) Enquiry and reference services	1	1
(6) Current awareness services	1	2
(7) SDI Services	1	2
(8) Design and development of bibliographic data-bases	1	2
(9) Design and development of non-bibliographic data-bases	1	2
(10) Integrated design of information system and services	2	-
(11) On-line data-bases and search- procedures	2	2
(12) Micro-computer application for library automation	2	4
(13) CD-ROM data-bases & search procedures	1	1
(14) Document delivery systems and procedures	1	2
(15) Information economics and marketing systems	1	-
(16) Information analysis and and repackaging methods	1	2

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Subject areas	Duration of Training course (weeks)	Duration of in-house train- ing at advanced centres (weeks)
(17) Users and use of infor- mation needs analysis methods	1	-
(18) Information networks, data- banks and services	2	2
(19) Training of trainers: Training methods	2	2
(20) Planning and management of information and documentation centres	2	2

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#### **IV. NATIONAL COLLABORATING CENTRES**

The group emphasized that CEHANET is a decentralized, mission oriented, regional information network. As a decentralized system it will concentrate on creating a regional data base including bibliographic data on documents produced and held in the national centres. Collection of documents produced by national centres will be minimal. The network will start with six/seven countries in the initial stage, namely: Jordan, Kuwait, Oman, Pakistan, Sudan, Syria and Tunisia. In each of these countries there will be an unlimited number of National Collaborating Centres, and CEHA as the Coordinating body of the Network will keep direct contact and communication with all these centres. At a later stage this style will evolve in order to designate one National Coordinating Centre in each country and keep the others as collaborating centres. Contact between CEHA and coordinating centres and between coordinating centres and collaborating centres will be the network mechanism for functioning.

##### **1. Criteria for Selecting National Collaborating Centres**

The group recommended the following criteria for selecting national collaborating centres in a country:

- 1.1. Availability of personnel specialized in EH or related disciplines in the institution,
- 1.2. EH activities should constitute part of the institution's total orientation,
- 1.3. Availability of a library/information unit or staff member to facilitate the network's activities,
- 1.4. The institution should be capable and ready to commit itself to the network requirements, standards, procedures, policies and activities.

##### **2. Role of National Collaborating Centres**

The group recommended that a national collaborating centre should commit itself to performing the following functions:

- 2.1. Disseminating the products and services of the network within the institution,
- 2.2. Identifying, selecting and when appropriate obtaining documents produced by the institution within the subject scope of the network,

- 2.3. Preparing data entry sheets for documents selected and making them available to CEHA. The WHO Representative's Office in the country may be used,
- 2.4. Identification of EH personnel in the institution,
- 2.5. Preparing, in collaboration with such personnel, the forms for the EH Directory data base and making them available to CEHA. The WHO Representative's Office in the country may be used,
- 2.6. Identification and study of information needs of EH personnel in the institution,
- 2.7. Providing CEHA, upon request, with copies of documents produced by or stocked in the centre,
- 2.8. Seeking feedback from users concerning the network's products and services with the aim of their development and/or initiation,
- 2.9. Identification of problem areas and proposed solutions in relation to systems and tools used within the network.

The group noted that after the initial stage and on the basis of evaluation of performance these functions will be modified and adjusted to be compatible with the role of the National Coordinating Centre in the country.

### **3. Criteria for Selecting National Coordinating Centres**

The group recommended the following criteria for the selection of a national coordinating centre in the country:

- 3.1. Availability of personnel specialized in EH or related disciplines in the institution,
- 3.2. EH activities should constitute part of the institution's total orientation,
- 3.3. Availability of a library/information unit,
- 3.4. Availability of library/information personnel who can handle, or maybe able to handle through training, such services and functions that networking requires,
- 3.5. Availability or potential for availability for utilizing information technology to function as a network node,
- 3.6. The location of the centre in the country should permit easy communication and accessibility,
- 3.7. The institution should have a good reputation for its information infrastructure and services,
- 3.8. The institution should be ready to commit itself to the network's requirements, standards, procedures, policies and activities.