ENVIRONMENTAL HEALTH REGIONAL
INFORMATION NETWORK (CEHANET)

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1. INTRODUCTION

Information exchange is one of the five programmes of CEHA. In addition to Community Water Supply and Sanitation, Control of Environmental Health Hazards, Food Safety and Rural and Urban Development, CEHA has been giving much attention to Information Exchange Programme. It is realized that the unimpeded flow of relevant information is the life-blood of the development process. This is particularly so in multidisplinary fields like environmental health. CEHA has therefore given high priority to the development of a comprehensive information unit which will act as the heart of the Environmental Health Regional Information Network (CEHANET), collecting, processing and disseminating technical information between national environmental health agencies and their personnel in the Region.

Preliminary surveys in the Region, however, indicate that some countries possess very good information facilities while in others information facilities are either nonexistent or, when they exist, are poorly staffed, scattered and operating in virtual isolation. This has the danger of leading to a situation where practicing professionals tend to be unaware of developments away from their own narrow responsibilities. While individuals can and do refer to privileged sources of information such as colleagues or acquaintances abroad when specific problems are being researched, such information is unfortunately lost once its immediate purpose has been served.

To ensure better control over and timely access to all information relevant to activities within the Region related to the broad mission of environmental health, CEHA planned, from its early stages, to establish an information gathering and distribution system called CEHANET.

In 1985 and 1986 two experts, on separate missions, were commissioned to study the information exchange prospects within CEHA. Both experts emphasized the importance of establishing CEHANET and recommended actions to be taken to materialize the information exchange programme in CEHA. The 1985 consultant drafted a Project Document for CEHANET development support, which was later revised and finalized as a proposal submitted in September 1987 to the International Development Research Centre (IDRC), Ottawa, Canada. Contact was made with IDRC and a contract was signed between WHO and IDRC in October and November 1987. In December 1987 CEHA held the Advisory Group Meeting on Exchange of Information in Water Supply and Sanitation. The Group discussed the various issues related to the establishment of the Network including its development, systems/tools and personnel needs. The Group concluded that the most encouraging for establishing the Network is the performance of other regional systems such as REPIDISCA and the offers of support from ALDOC, and of course, the backing of WHO, Geneva.

Even so, the limited resource allocation is a matter for concern.

The distinction between the pilot phase 1988-1989 and a later phase 2 from 1990 is a method of managing this situation. In phase 1, services will be offered in key areas, systems and tools will be created or acquired and

training will start. The style for developing the system and the services will be evolutionary.

Of some concern is the institutional strengthening of CEHA, the need to make clear arrangements for the management function, supported by sufficient delegated executive powers to encourage the leadership and drive that will be required to make the CEHANET Project a success, coordinated by WHO.

Phase 1 will also include a planning activity for the professional operation of phase 2. An increased establishment of qualified staff is necessary for this phase. It was a matter of concern to the group that the requisite resources should be provided for this and for the training that is essential for successful operation. Without such provision, the success of the project will be jeopardized.

CEHANET was formally launched on 1 February 1988, by recruitment of full time staff and running of information services within the framework of CEHANET.

2. CEHANET STRUCTURE

CEHANET has been conceived as one of active collaboration within the Region, enabling participant institutions to be both recipients and donors of information. CEHA's role within the Network comprises two functions; as a channel for information from WHO and other relevant bodies in the international community and from other institutions outside the Region; and as the overall coordinating centre for network activities. The Network therefore, has been characterized as a decentralized, mission-oriented regional information network. Within this type of decentralized structure CEHA will act as the CEHANET Coordinating Centre. In each country of the Eastern Mediterranean Region (EMR) there will be one CEHANET National Focal Agency (NFA) and an unlimited number of CEHANET National Collaborating Centres (NCC). NFAs and NCCs are selected according to a set of criteria and assessment of local situation in each EMR country. Each node (component) of the Network will have a specific set of functions to perform according to the Memorandum of Understanding signed between WHO/CEHA and the NFAs and the NCCs.

Figure 1 shows CEHANET structure in a typical national situation.

3. AIMS OF CEHANET

The aims of CEHANET are to:

(a) Promote regional cooperation in information exchange through the adaptation or development of standardized methods and materials developed by intersectoral and regional organizations for selecting, indexing, processing and disseminating information related to environmental health;

(b) Help build the information infrastructure of participating national centres and institutions through training seminars and short courses to enable them to service their own clientele.

(c) Obtain commitments of respective governments that the Network should be based on the participation of national agencies that will be directly involved in its management and operation.
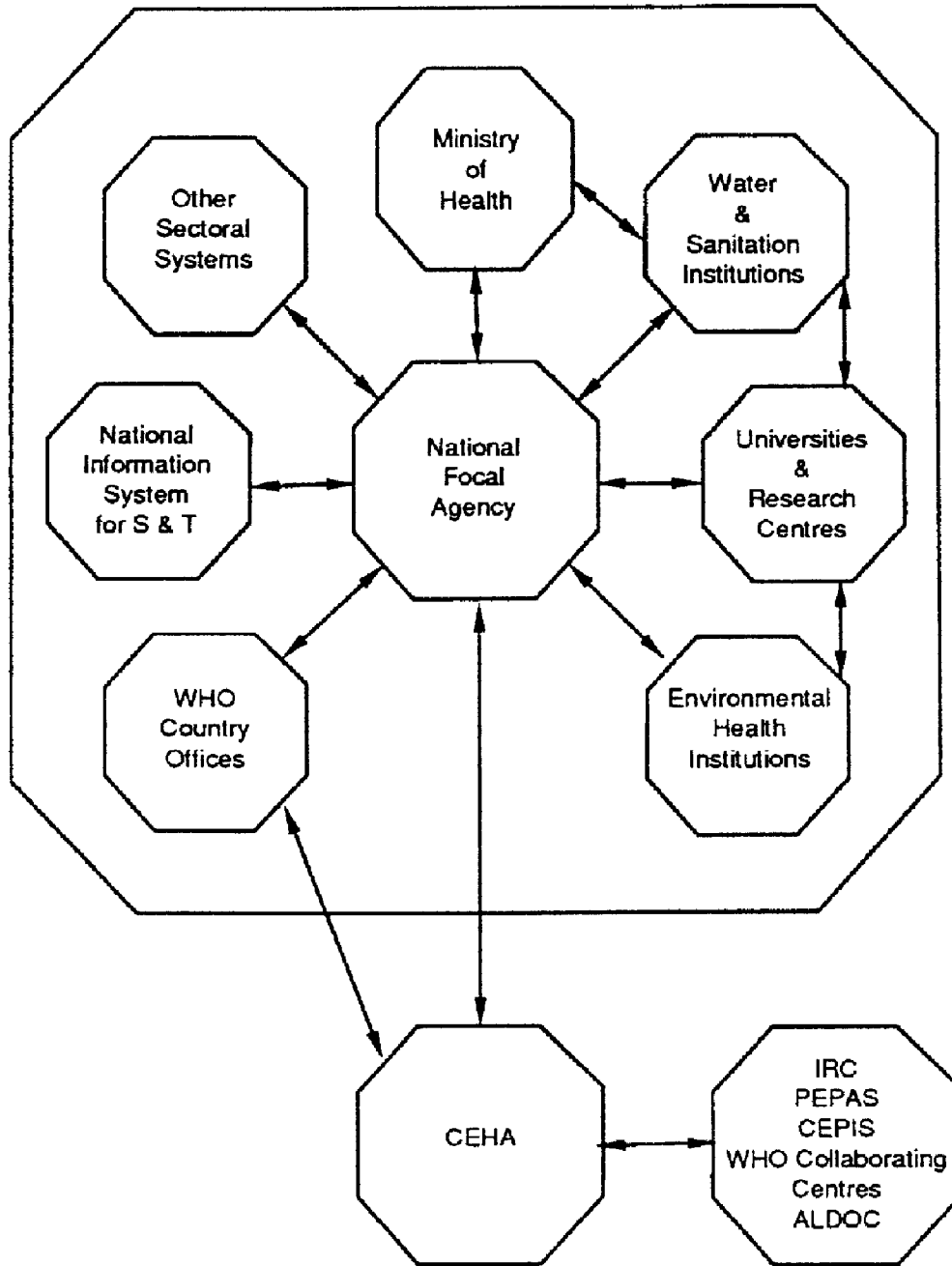
Fig. 1. CEHANET typical national network

4. OBJECTIVES OF CEHANET

Within the broad mission of CEHANET, the following objectives are implied:

(a) To identify institutions, and individuals within them, who are in need of timely, appropriate technical information to achieve their research and/or development programme objectives;

(b) To sensitize institutions, and individuals within them, to the benefits of access to the above information, from sources within and outside the Region;

(c) To develop and strengthen the information exchange capacity of national institutions;

(d) To activate a cooperative network, CEHANET, in which countries participate according to a "territorial formula" for sharing work and responsibilities;

(e) To facilitate the provision of information services and document delivery to end-users;

(f) To establish and develop regional bibliographic and non-bibliographic data bases in the field of environmental health.

5. SPECIFIC OBJECTIVES OF CEHANET

The Memorandum of Grant Conditions signed between WHO and IDRC specified a set of objectives to be achieved within the life-time of the project (2 years). They are:

(a) To establish a CEHANET Consultative Group and convene two consultation meetings;

(b) To strengthen documentation centre staff in modern information handling procedures;

(c) To produce an Arabic version of the "Interwater thesaurus";

(d) To adapt existing information processing tools and manuals for use by CEHANET;

(e) To compile and publish a directory of institutions and individuals working in the region in the area of water and sanitation;

(f) To publish three issues of a regional environmental health bibliography and provide document delivery service; and

(g) To convene two regional workshops on CEHANET procedures.

6. SUBJECT COVERAGE OF CEHANET

The Network will be developed to provide information in support of WHO programmes in environmental health, namely:

(a) Community Water Supply and Sanitation;
(b) Environmental Health in Rural and Urban Development and Housing;

(c)   Health Risk Assessment of Potentially Toxic Chemicals;
(d)   Control of Environmental Health Hazards;
(e)   Food Safety.

The subject scope of these programmes covers environmental health and sanitation; sanitary and environmental engineering; environmental sciences and related disciplines; water resources and water pollution; water supply, wastewater; solid wastes; soil pollution; air pollution; industrial safety and health, use of pesticides, insecticides, food safety and hygiene, chemical safety etc.

7. CEHANET USERS

The target users for the services of CEHANET include the following types of individuals working in the environmental health field:

Policy makers; planners; managers and administrators; engineers and technicians; researchers, academic teachers and students; consultants, officials of finance and technical cooperation agencies; and information specialists.

These users are located in the following types of institutions concerned with environmental health activities:

Legislative bodies; Ministries of Planning; Ministries of Health (Environmental Health Services); Ministries of Public Works (Water Supply and Sanitation Services); Ministries of Environment; Agencies in ministries with environmental health concerns - Agriculture (e.g., pesticide contamination), Labour (e.g., occupational health); national agencies for natural resources; regional and municipal sanitation authorities; water commissions and authorities, and science and technology information exchange agencies.

8. CEHA DOCUMENTATION UNIT

It has been recognized that CEHA Documentation Unit is the heart of CEHANET system. CEHA as the coordinating body of CEHANET took this into consideration from the beginning. The Unit's organization and services reflect and affect the Network's status and performance.

8.1. Personnel

The overall supervision of the Unit is the responsibility of the CEHA Information Scientist who was recruited for the Project since 1 February 1988. A full time Documentalist was also assigned to run the Unit. Temporary staff were occasionally recruited to assist in implementing some of the activities such as indexing, cataloguing, photocopying and batch data entry. A secretary was also assigned for CEHANET who has been assisting the Unit.

8.2. Collection development

The library collection includes over 2000 documents on various environmental health subjects. Selection of documents for CEHA is based on the selection criteria adopted for this purpose. Regular subscription of 43 journals also constitutes a major part of the library collection. The library deposits all EMRO and CEHA publications. Environmental health publications from WHO/HQ are also acquired on a selective basis.

It is planned that CEHA acquires key country reports from all Member States in addition to journals published by environmental health institutions in the Region.

8.3. Organization

Modern and standard methods are used to organize knowledge at CEHA Documentation Unit. UNESCO CDS/ISIS software is used for information storage and retrieval. Arabized Interwater Thesaurus is used for vocabulary control. CEHANET Procedures Manual is used for cataloguing and bibliographic control. CWS classification scheme is used for classification. DBase III is used for serials control and journals subscriptions. All documents are now on the data base after being converted from CARDBOX into CDS/ISIS. Access to documents can be by author(s), title, publisher, subject and descriptors.

8.4. Equipment and software

To support the documentation services, the following equipment have been acquired and installed:

Equipment

- Photocopier
- Micro computers
- Laser printer
- MODEM
- Telephone line
- Printers.

Software

VENTURA, Multimate, CDS/ISIS, DBase III+, CARDBOX+, LOTUS 123, SAMNA+, Advancelink, Crosstalk, George.

Plans have been put forward to acquire the following:

1. Microform Reader/Printer to facilitate use of various microforms
2. CD-ROM disk player
3. HP3000 Minicomputer
4. CD-ROM Disks of Environmental Health Data Bases
5. MINISIS software for bibliographic control and regional data bases.

9. ARABIC INTERWATER THESAURUS

As an information storage and retrieval took, the Interwater Thesaurus developed by IRC has been translated into Arabic. The translation involved the production of a bilingual thesaurus (Arabic/English). The Thesaurus will be published by CEHA and distributed to CEHANET National Focal Agencies and Collaborating Centres. It will then be developed into an English/Arabic Dictionary of Environmental Health terms to be published by CEHA.

10. CEHANET PROCEDURES MANUAL

Two documents (Arabic and English) titled "CEHANET Procedures Manual" were produced. The English version was used during the First Regional Workshop on CEHANET Procedures (24 June to 6 July 1989). The Manual covered all the aspects related and needed for standard bibliographic control.

The Manual will be the basis for information exchange between CEHA and the NFAs and NCCs. Training will be supplied for this purpose and copies of the Manual will be distributed accordingly.

11. CRITERIA FOR SELECTION OF MATERIALS FOR CEHANET'S DATA BASE

CEPIS was contacted and its permission was taken to adapt their "Criteria" to be used by CEHANET. The document was translated into English (from Spanish) and adapted by CEHA to suit CEHANET purposes. The final version of the Criteria is pending approval at EMRO. The document will be published by CEHA and distributed to NFA's and NCC's.

12. REGIONAL DATA BASES

It has been stated that one dimension of CEHANET is its regional characteristics. Therefore, collection, organization and dissemination of regional information characterize CEHANET activities. Two types of regional data bases have been maintained by CEHA:

12.1. Regional bibliographic data bases

(a) Regional bibliography

Data on reports, articles, studies, theses etc. have been collected from the 23 countries of the Region. The data is held on the computer. A hardcopy was produced in a book form as the first edition of the Environmental Health Regional Bibliography. 500 copies were distributed in the Region. Two more issues will be published later this year and in 1990.

(b) Union list of environmental health journals

Data has been collected from the 8 NFAs on the environmental health journals held in their libraries. A union list will be published giving full bibliographic information on each journal and its holdings in each NFA. This will give the chance to users to know the location of each journal in the Network. Document supply will be the second stage after compiling and publishing the list.

(c) Index of five environmental health journals

Based on the data collected as a result of the Document Delivery Services a list of core journals has been made. The most used five journals used by CEHANET user group have been completely indexed. Bibliographic data was added to CEHA Data Base. In addition to that 43 EH journals held at CEHA Library are continuously reviewed and articles relevant to EMR countries and to CEHA priority areas of activities are indexed. Dissemination of information from the content of this data base will be in a current awareness bulletin form.

(d) CEHA bibliographic data base

This data base includes full bibliographic data on all documents held at CEHA Library. It has been recently converted from CARDBOX to CDS/ISIS. It has also been converted once again to MINISIS to allow for Thesaurus use with it.

(e) CWS data base

CWS Unit at Headquarters supplies CEHA on a regular basis, with its data base on a diskette. This read-only version of the data base has been fully utilized by CEHA. Copies of the diskette have been distributed, through CEHA, to interested environmental health agencies in the Region. A printed copy of the data base is also available at CEHA for consultation.

(f) Current contents of international environmental health data bases

CEHA contacted three international well-established environmental health data bases through the Royal Scientific Society - Jordan. Their contents since their establishment and up to 31 May 1989 were searched. The result was over 2000 citations/references on environmental health in the 23 countries of the Region. The same data bases (Pollution Abstracts, Environmental Health Bibliography, ENVIROLINE) will be acquired on CD-ROM when available to allow as many searches as needed through CEHANET.

(g) Environmental health standards data base

CEHA has started building up a comprehensive collection of environmental health standards issued by standards agencies in the Region. After their collection, processing and organization in a separate data base, a printed copy will be distributed in the Region.

(h) Environmental health theses data base

CEHA has started collecting data from environmental health academic institutions on MSc and PhD theses accepted by post-graduate students. This data base will also include data on research projects in the Region whether academic institutions or research and development centres.

12.2. Regional non-bibliographic data bases

Non-bibliographic data bases are those which hold data of textual, directory or numerical nature. The following data bases have been maintained:

(a) CEHA mailing list

Includes now 1880 entries with full postal address, type of CEHANET services supplies and subject interests. This list is updated continuously through special forms.

(b) Environmental health professionals regional directory

A data base including full biographic data on environmental health professionals in the Region. 500 entries are included now. A printed copy will be published early in 1990.

(c) Environmental health institutions Regional directory

A data base including full details on environmental health institutions in the Region. 80 entries are included with details on their management, personnel, activities, facilities and mailing address.

(d) Data base of participants in CEHA Regional and national activities

A directory data base including name, country, meeting, date and other details on participants of regional meetings which were held at CEHA and national meetings held in Member States.

(e) Data base of CEHA consultants

A directory data base including details on short-term consultants and temporary advisors who were recruited by CEHA. Details include name, mission, duration, place of mission, report status and other comments.

(f) EMR statistical data base

A numerical data base including statistical data on the 23 countries of the Region. This data was compiled by EMRO and supplied to CEHA for manipulation and use. This data is used as a management tool to support decisions in planning CEHA activities and workplans.

13. REGIONAL WORKSHOPS ON CEHANET PROCEDURES

One of the specific objectives of CEHANET Project was to convene two regional workshops on CEHANET procedures. They aimed at creating a common understanding and to supply training to technical personnel working in libraries/documentation units of environmental health institutions.

The Second Regional Workshop is planned for 13-14 May 1990.

It is planned that two national training workshops will be convened in Sudan and Pakistan in early 1990.

14. CEHANET NATIONAL FOCAL AGENCIES AND NATIONAL COLLABORATING CENTRES

The recommendations of First TAC Meeting and of the Advisory Group Meeting and First Consultative Group Meeting on Cehanet have been implemented. Evolutionary development of the Network is the strategy which has been followed.

The first phase of the project covers now eight countries (Egypt, Jordan, Kuwait, Oman, Pakistan, Sudan, Syrian Arab Republic and Tunisia). One institution in each country has been identified to act as CEHANET National Focal Agency. Other institutions were also identified to act as CEHANET Collaborating Centres. CEHANET Collaborating Centres are the institutions which have environmental health/water supply and sanitation activities and personnel and who would benefit from CEHANET services, according to the proposed Memorandum of Understanding. Eight institutions in the eight countries have been approached to sign the Memorandum of Understanding to act as CEHANET NFAs. Egypt, Jordan, Pakistan, Sudan and Tunisia have already signed the Memorandum of Understanding. The work on signing the Memorandum of Understanding with NCCs has started in collaboration with the NFA in each country.

Contact has also been established with some EH and WS & S institutions in the rest of EMR Member States.

15. ONLINE INFORMATION RETRIEVAL

Arrangements have been made to establish on-line computer link with some institutions and information systems in the Region and beyond.

16. COLLABORATION WITH REGIONAL AND INTERNATIONAL INFORMATION SYSTEMS

CEHA has been able to build bridges and forge links with a number of regional and international information systems including:

International Development Research Centre (IDRC), Ottawa, Canada; International Reference Centre for Community Water Supply and Sanitation (IRC), The Hague; United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris; Arab League Documentation and Information Centre (ALDOC) Tunis; Abdul Hamid Shoman Foundation (ASHF), Amman; and CEPIS/REPIDISCA, Lima, Peru.

17. CEHANET SERVICES

CEHANET services have taken various forms, namely:

(a) Reference services in response to queries from professionals either by mail, telephone, fax or personal visits to CEHA. That include the following:

- Literature searches;
- Specific technical questions;
- Referral services.

(b) Current awareness services which CEHANET provides to professionals in anticipation of their information needs and to keep them up to date.

That included the following:

- Technical News Digest. Three issues have been published and distributed to over 1000 addresses. The Digest form has been redesigned and renamed to CEHA Newsletter to fit better with other services.

- "CEHA Contents". A bimonthly current contents of CEHA journals. Eight issues have been distributed regularly to 550 EH personnel and institutions in EMR including top and middle management, research and development, training and education, documentation centres and libraries. The list will be continuously expanded and updated according to the growth of CEHA mailing list and demand. Special concern is given to professionals in the eight countries covered by the first phase of CEHANET Project. A questionnaire was distributed in October 1989 to all recipients of the "Contents" to evaluate all the aspects of the service (distribution, use, backup and satisfaction). The replies which have returned show greater interest, high degree of satisfaction and that the "Contents" has been very useful to professionals in their work and career advancement.

- Selective Dissemination of Information (SDI). SDI service has started on a trial basis. Short profiles of users have been prepared based on their field of work and functions. According to that a list of documents is prepared on a certain subject, then sent to concerned people. The first batch was on Effluent Reuse. Same will be done on other subjects and

will be sent to other professionals. Feedback from users will be essential to developing this service.

(c) Document Delivery Services. The services have taken the following forms:

- Photocopying. As a backup service to "CEHA Contents", CEHA has supplied photocopies of articles requested by EH personnel in the Region. Photocopies were made and dispatched promptly to users, using the pouch service for mailing. CEHANET has been overwhelmed by demand for photocopies from EH individuals and institutions so the number of articles to be supplied in any one's request had to be limited to four. Since launching this service in May 1988, 988 articles were distributed to 280 professionals in 19 EMR countries.

- CEHA's List of Documents for Distribution. A continuously updated list of documents has been sent to EH institutions in the Region. They were supplied with a special order form and were asked to select the titles that they need. Twenty one EMR countries have benefited from this service and copies of documents have been dispatched to EH institutions in these countries upon their request. Since launching CEHANET, 925 documents were distributed to 99 institutions and individuals in the Region.

APPENDIX 1

LIST OF ABBREVIATIONS

AACRII	Anglo-American Cataloguing Rules, 2nd edition
AHSF	Abdul Hamid Shoman Foundation
ALDOC	Arab League Documentation and Information Centre, Tunis, Tunisia
ASMO	Arab Organization for Standardization and Meteorology
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
CSA	Contractual Service Agreement
CWS	Community Water Supply
EH	Environmental Health
EMR	Eastern Mediterranean Region (of WHO)
EMRO	Eastern Mediterranean Regional Office (of WHO)
ENSTINET	Egyptian National Science and Technology Information Network
EPA	United States Environmental Protection Agency
IDRC	International Development Research Centre, Ottawa, Canada
IRC	International Reference Centre for Community Water Supply and Sanitation, The Hague, The Netherlands
IRCWD	International Reference Centre for Wastes Disposal, Switzerland
ISO	International Standards Organization

NFA	National Focal Agency
NCC	National Collaborating Centre
REPIDISCA	Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences
RSS	Royal Scientific Society, Jordan
SDI	Selective Dissemination of Information
TAC	Technical Advisory Committee
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization
WS & S	Water Supply and Sanitation