ACC Sub-Committee on Water Resources
14th session
INSTRAW Headquarters
Santo Domingo, Dominican Republic
6 - 8 October 1993

ACC/SWR/1993/3

REPORT OF THE WORKING GROUP ON
INFORMATION MANAGEMENT.

WMO HEADQUARTERS
GENEVA 30 JUNE - 2 JULY 1993

BACKGROUND

At its meeting of October 7-9, 1992, the Intersecretariat Group for Water Resources agreed to the following:

> "The members of the Intersecretariat Group agreed to consider at its next session measures that should be taken towards the possible establishment of a system-wide integrated monitoring and assessment network. It also envisaged the possibility of convening an expert consultation at a later stage. They decided to establish a working group under the chairmanship of WMO, composed of DESD, UNEP, UNICEF, UNESCO, FAO, WHO, the World Bank and WMO. The working group was entrusted with the task of identifying existing relevant data bases so as to define the issues involved in integrating their data, including such questions as the division of data bases between those concerned with the resource itself, and those dealing with its use; identifying the various elements that should be considered in defining the basic methodology for the system, such as health, economic indicators, land use indicators, food production, populations etc., as well as the ways in which these indicators should be classified and managed. The working group would consider the steps to be taken in the preparatory phases of the process concerning methodological approaches, with a view to making recommendations to the Intersecretariat Group, including estimates of the financial resources that might be required in setting up the system. ..... Prior to the meeting of the working group, a system-wide survey of existing databases would be conducted in order to determine their relevance to water resources."

DISCUSSION

The meeting was opened by Dr. A.S. Zaitsev, Assistant Secretary General of WMO. He provided a brief summary of WMO's experience in real-time data collection, information transfer and use. He also referred to a number of WMO initiatives in the hydrology field, including the WHYCOS programme.

After some discussion, the Agenda was amended and approved (Annex 2). The participants viewed the issue of information management as essential, especially for United NationsAgencies which have to handle, interpret and disseminate information. They saw it as important that United NationsAgencies remain current in terms of information management capabilities. In the water sector, UNCED has charged United NationsAgencies with effective interpretation and assessment of the status of the world's water resources, threats, and with capacity building to ensure appropriate data gathering and interpretation for purposes of national policy development. It is noted that information technology, including database development, in United Nations agencies is largely uncoordinated, with duplication and many gaps. The explosion in technology underscores the need to provide a system-wide framework for a comprehensive approach to environmental information systems and management. This does not imply centralization or requirement to use particular software systems, but rather the determination of standards, protocols, compatibility, etc. that should guide all developments in information technology and database development in individual Agencies.

Dr. Ongley of Environment Canada and representing the GEMS/Water Programme (UNEP, WHO) provided an overview of the framework of Environmental Information Systems, advantages and disadvantages of commercial versus non-commercial systems, and many of the technical issues that Agencies would have to consider in developing the types of information systems that could be used by United Nationsand national Agencies. Major issues for discussion included the following:

What are the **OBJECTIVES** of a United Nations water information system?

Who will be the **USERS** of such a system?

What are the core **DATA/INFORMATION** needs?

What are the core **TECHNICAL** issues, including such issues as confidentiality?

Which types of **DECISION-SUPPORT** functions are required?

Dr. Ongley presented the result of the survey of databases and software held by United Nationswater Agencies (Annex 3). The participants noted that the survey was incomplete but that additions would be forthcoming in the immediate future. The group urged the United NationsAgencies provide a complete return of the questionnaire.

DISCUSSION ON REVISED AGENDA

Because of the interlinkage of the substantive issues this report is structured according to the main issues identified.

1. Key databases.
2. Accessibility.
3. Provision of data to users outside United NationsAgencies.
4. Capacity-building at the national level.

Resource databases comprise systems containing information on hydrology, hydrogeology etc. (ie. data on quantity and quality of the resource). **Use and impact databases** are those containing information on users needs, actual consumptions, etc., again, in terms of quantity and quality. **Institutional/legal databases** comprise information on institutional/managerial responsibilities and capacities, legal provisions ie. water extraction rights, etc., and economic factors.

1.   KEY DATABASES

Relevant databases can be grouped into three types:

* Data which refers to the resource itself.
* Water use and impact information.
* Institutional/legal information.

The group felt that emphasis should be placed on the further development of databases in the fields of:

Resource Databases

* Runoff data, (need for enhanced national contribution of data to WMO/GRDC).
* Sediment data (not generally available in international databases).
* Land Use -- while not related to water per se, it was agreed that this information is essential for assessment and planning of water resources.
* Groundwater -- extent
* Water Quality -- the need for parameters that more accurately reflect regional issues and which are not adequately collected by national Agencies at present.
* Hydrometeorlogical data (precipitation, evapotranspiration and soil moisturestorage capacity[1])

Use and Impact Databases

* Water abstraction and water use/demand.
* Wastewater, disposal and re-use.
* Location and statistical data on hydroelectrical installations.
* Information on dams and diversions.
* Minimum flows required for navigation (rivers, canals).
* Vector-borne diseases.
* Health impacts.
* Urban runoff.
* Vulnerability of surface and groundwater: threats to resource degradation.

Institutional/Legal Databases

* Annotated lists of United Nations and supporting agency water projects.
* Annotated lists of Agreements, Accords, etc. on shared water resources.
* Institutions, legislation, etc.
* Economic instruments.

Some of the information noted above is available but is not easily accessible in electronic form.

2   ACCESSIBILITY

Accessibility is largely a technology issue. Access can range from request by mail to on-line access. There was much discussion and general consensus on the need for a catalogue (inventory) of United Nationswater-related databases with sufficient information (metadata) about the databases to enable appropriate use of the various databases. It is noted that, historically, United NationsAgencies have tended to build in-house data systems; with

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[1]   FAO has developed a database on soil moisture storage capacity on the basis of information from the 1/5,000.000 Soil Map of the World

modern software, Agencies might consider moving from unique, stand-alone systems, to more flexible systems that are maintained outside of Agencies and which offer much more flexibility and commonality.

3.   PROVISION OF DATA TO USERS OUTSIDE UNITED NATIONS AGENCIES

United NationsAgencies should be responsive to information needs by outside users. This requires that issues such as confidentiality, nature of access, private sector involvement, pricing, etc. will have to be addressed and a uniform policy adopted by United Nations water Agencies.

4.   CAPACITY-BUILDING AT THE NATIONAL LEVEL

There was consensus that United Nations agencies had not only a responsibility to assist national Agencies to gather, manage and utilize water data more effectively, but also that capacity building would strengthen the ability of United Nations agencies to collect better data from countries for global assessment purposes. Experience in many agencies has indicated that the "carrot" approach was effective in securing cooperation from counterpart organizations at the national level.

In carrying out capacity building, United Nations agencies will have to consider a number of issues:

*   Ensuring that there is a consistent approach to the provision of advice on compatibility of software, data quality. In part, this is necessary to ensure that local agencies can interact with each other.

*   Emphasis on the need to mobilize data for management purposes.

*   Ensure that software used in United Nations country programmes is up-dateable, flexible, and communicates with other software.

RECOMMENDATIONS

1.   The Working Group regards the ability of United Nations water agencies to deal with the Information Revolution as an urgent and critical matter. The Group concluded that the efficiency with which United Nations agencies are able to utilize information effectively using modern technology willhave an impact on the credibility of the United Nations system. Therefore, the Group considers it imperative that the Subcommittee take up this matter as a one of extreme importance and urgency, and that efforts and resources will have to allocated to this issue as a matter of priority. The Group further notes that long-term economies will also be identified through the identification of redundancies and harmonization of technology.

2.   The ACC Subcommittee on Water Resources should address the problem of gaps in data, and should assign responsibilities to appropriate agencies to deal with them, and should establishing priorities and timetables.

3. Questionnaires have not proved effective in eliciting information from agencies. The list of databases and software obtained by questionnaire and noted in Annex 3 is very incomplete. The following steps are required:

    a) Agencies must fill in the questionnaire.

    b) Each agency must identify a person to serve as focal point for the work of this Working Group.

    c) There will be a need for a short-term Consultant to consolidate the inputs (one month).

    The alternative to the above will be to hire a Consultant to carry out this task on the part of United Nations agencies (six months plus extensive travel).

4. It is recommended that a technical study be carried out into the feasibility of an electronic catalogue of databases. This would include recommendations on issues such as the technology of access, metadata, linkages between databases, confidentiality, etc.. The objective is to define the options of implementing an information system, including a cost estimates of implementation, for consideration by the Subcommittee. This activity would follow from Recommendation #2 above. This would be carried out by a Consultant (3 months).

5. United Nations water agencies should develop a process for tracking the rapidly developing information technology field and which can provide advice to agencies on a routine basis for information systems, database and communications development.

6. Agencies should put emphasis on strengthening the capabilities of developing countries to handle, analyze and use water resources information at the local, regional and national levels using appropriate methodologies and software.

7. In the process of capacity-building, Agencies should promote the use of software that has minimum training requirements, is inexpensive, flexible, is maintained and up-dated, and which easily links to other software. Agencies should discourage in-house and/or in-country development of unique software packages that have no maintenance and are not connected with the mainstream of software development.

8. A catalogue of software should be created that provides United Nations and other agencies with information on types of packages available, costs, applications, communications and linkage capabilities, training requirements, source, etc.. The purpose of this catalogue is to facilitate and encourage the use of existing packages rather than developing new and often redundant software.

9. The Working Group on Information Management should continue to provide the framework for interagency cooperation in the implementation of these recommendations.

ACC-SUBCOMMITTEE ON WATER RESOURCES

Working Group on Information Management

Major Issues to be Considered

1. **OBJECTIVE:**   What is the objective of an Information System?

2. **USERS:**   Who will be the primary users of such a system?

3. **DATA / INFORMATION:**   What are the **core** information needs?
   - numeric
   - documentary
   - imagery (satellite, etc.)
   - maps
   - photographs
   - knowledge

4. **TECHNICAL ISSUES**
   - System Architecture
   - Commercial / Noncommercial
   - Communications, Networks
   - Linguistic
   - Integration -- at user level or ????
   - Databases
   - Output and Visualization
   - Access and Privacy - confidentiality

5. **DECISION-SUPPORT**
   - Knowledge base
   - Expert Systems

(GEMS/Water Collab. Ctr.; CCIW - June/93)

Annex I
LIST OF PARTICIPANTS

Mr John C. Rodda, Chairman	WMO
Mr. Pierre Najlis, Secretary	UN/DPCSD
Mr. Walter Rast	UNEP
Ms. Veerle Vandweerd	UNEP
Mr. Habib El-Habr	UNEP
Mr. Ron G. Witt	UNEP/GRID
Mr. Rainer Enderlein	ECE
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Ms. Alice Aureli	UNESCO
Mr. Richard Helmer	WHO
Mr. Dennis B. Warner	WHO
Mr. Greggor Watters	WHO
Mr. John Miller	WMO
Ms. Eirah Gorre-Dale	WMO
Mr. Edwin Ongley	GEMS/Canada
Mr. Shinji Ide	ILEC
Mr. Masahiro Yoshioka	ILEC
Mr. Thomas Lüllwitz	GRDC
Mr. Wolgang Grabs	GRDC

Annex II
AGENDA

1.   Opening of the meeting and adoption of the agenda;

2.   Purposes of the meeting: review of the decision taken by the Intersecretariat Group at its 13th session concerning the establishment of a system-wide integrated monitoring and assessment network;

3.   Review of the survey of data bases within the organizations of the United Nations system:

   (a)   Result of the questionnaire;

   (b)   Additional information from the organizations

4.   Scope of a system-wide integrated network - demand for information:

   (a)   At the national level;

   (b)   At the regional level;

   (c) At the global level;

5.   Definition of the basic parameters that need to be included in a network;

6.   Basic institutional and technological requirements for the establishment of an integrated monitoring and assessment network - financial implications;

7.   Recommendations to the 14th session of the ACC Sub-committee on Water Resources.

Annex III
SUMMARY OF RESPONSES TO THE QUESTIONNAIRE

ORGANIZATION	DATA BASE	SOFTWARE
ECE	1	
ECLAC	4	
FAO	6	2
UNESCO		
Latin america	5	
Paris	1	2
UNEP		
GEMS/Water	1	2
GRID	-	-
WHO	2	2
WMO	1	-
	21	8

UN AGENCY RESPONSE/HOLDINGS OF
WATER-RELATED DATABASES AND SOFTWARE

AGENCY	DATABASES	SOFTWARE
UNEP-GEMS	GEMS/WATER (quality)	RAISON
		RAISON/GEMS
-GRID	UNEP/GRID (many)	
-INFOTERRA	INFOTERRA	
UNESCO-HQ	W.A.C.	IDAMS
-ROSTLAC	HIDRO	CDS/ISIS
	HYD	
	HYDROEXPERTS	
	HYDROGEOL.MAPS	
	SWB	
WMO-HQ	HOMS	
	INFOHYDRO	
-GRDC	GRDC (hydrology)	
WHO-HQ	EHMDAC	EHMDAC
	WASAMS	WASAMS
FAO-HQ	AEZ	CROPWAT
	AGROSTAT-PC	
	AMDASS	
	ASFA	
	FAO-GIS	
	FISHSTAT-PC	FISHSTAT-PC
	OTM	
ECE	IEDS (Int.Env.Data Serv.)	
ECLAC	BIBLIO	
	HAZARDS	
	SISUA	
	WTPLL	
ESCWA	NRDB	
DEPT.HUMAN. AFFAIRS	DHA-(disasters)	
HABITAT	HSDB.stat	HSDB.stat
	PC-CitiBase	PC-CitiBase

Update: Sept 8, 1993

WATER-RELATED
DATABASES

An inventory of water-related databases at regional and global scales,
that are held by the U.N. agencies.

(Updated: September 21, 1993)

TERMS USED IN THIS QUESTIONNAIRE
DATABASE

TYPE OF DATABASE:

Factual/Numeric --	Descriptive facts, numeric data, etc.
Referral --	Refers reader to source of information
Bibliographic --	References publications, documents, reports, etc.
Text --	Full or partial documents, abstracts, etc.
GIS --	Geographical Information System; state whether files are vector or raster based.
Photo --	Photographs, video, satellite images, etc.

SIZE: Number of records, items etc..

LANGUAGE: Spanish, English, French, etc..

ACCESS: Do you make the database available upon request?

DO YOU DISTRIBUTE THE DATABASE: Do you normally distribute the database on a regular or irregular basis? If so, what types of organizations, agencies, or dividuals would receive the database.

ON-LINE: Can the user dial into your database via an electronic network.

SOFTWARE: For example: dBase, Arc-Info, WORD, CDS/ISIS, Lotus, etc.

DATA STANDARDS: Some agencies require that data meet certain standards before it is accepted into the database.

METADATA: Metadata is information about the data such as a description or explanation of how the data were measured. For example, the requirement to meet certain data standards would be an example of metadata. Identification of an analytical protocol for water quality data would be another example of metadata.

AEZ

Climate, ecology, land use, resources evaluation

Database Name:	Agroecological Zone Data Bank
Type:	Factual / Numeric
Created:	1969
Size:	N/A
Update:	Occasionally
Growth:	N/A
Language:	English
Electronic Form:	Yes
Hardware:	Mainframe
Software:	Fortran / Cobol
Data Standards:	No
Metadata Available:	No
Distribution:	Yes
Access:	No
Cost:	N/A

For Further information:

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EMail: N/A

Date Received: May 10, 1993

AGROSTAT-PC

An electronic version of the FAO Yearbooks.

Database Name:	AGROSTAT-PC
Type:	Numeric
Created:	1991
Size:	305,000 Time Series
Update:	Yearly
Growth:	N/A
Language:	English, French, Spanish
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	N/A
Data Standards:	Yes
Metadata Available:	No
Distribution:	Yes, Diskette
Access:	Diskette
Cost:	N/A

For Further information:

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EMail: N/A

Date Received: May 10, 1993

AMDASS

The main purpose of AMDASS is to provide information on weather factors relevant to agriculture over the developing world. AMDASS includes the following: long term rainfall data, monthly 10-day, 30 year agroclimatological data for Africa, PET, ETa....

Database Name:	Agrometeorological data systems
Type:	Factual / Numeric
Created:	1986
Size:	50,000 entries
Update:	Continuous
Growth:	5 %
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	CLICOM
Data Standards:	No
Metadata Available:	Yes, stored as part of the database.
Distribution:	No
Access:	No, but information from the database can be requested. Printout, Diskette
Cost:	N/A

For Further information:

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Date Received: May 10, 1993

ASFA

The ASFA database contains bibliographic references to the world's literature on the science, technology and management of marine and freshwater resources and environments including their socio-economic and legal aspects.

Database Name: Aquatic Sciences and Fisheries Abstracts (ASFA) Database.

Type: Bibliographic

Created: 1978

Size: 400,000 records

Update: Monthly

Growth: 30,000

Language: English

Electronic Form: Yes

Hardware: IBM-PC or Compatible for CD-ROM Version, Mainframe (DIALOG, BRS, etc.)

Software: N/A

Data Standards: Yes

Metadata Available: N/A

Distribution: Yes, to participating ASFA input centres, subscription. Printout, Tape, CD-ROM, On-Line

Access: On-Line, Printout, Tape, CD-ROM

Cost: On-Line from commercial vendors; Printout free to developing countries from FAO; Tape on subscription $8150/yr US; CD-ROM on subscription $1495/yr US, backfile ~$500/yr

For Further information:

Chief, Fishery Information
Data & Statistics Service
Food & Agriculture Organization of the United Nations
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00100 Rome, ITALY

Phone: 57971

Fax: 512 0330

EMail: FAO,FIDI omnet/sciencenet

Date Received: May 10, 1993

BIBLIO

Publications on water resources of Latin American and Caribbean countries.

Database Name:	BIBLIO
Type:	Bibliographic
Created:	1985
Size:	~3900 records
Update:	Monthly
Growth:	N/A
Language:	English / Spanish
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	Micro CDS/ISIS
Data Standards:	No
Metadata Available:	No
Distribution:	No
Access:	Diskette
Cost:	N/A

For Further information:

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         2061519

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        56 2/2081946

EMail: N/A

Date Received: June 1, 1993

DHA-GENEVA

DHA Library contains more than 3000 publications on disaster related problems. E. network contains: bibliography of publications; list of disaster events; schedule of international meetings; set of situation reports on each specific event with DHA involvement.

Database Name: DHA GENEVA Bibliographic Database

Type: Bibliographic

Created: 1984/85

Size: 845 related to water issues.

Update: Bi-monthly

Growth: 50

Language: English

Electronic Form: Yes

Hardware: Mainframe

Software: INQUIRE

Data Standards: No, to be implemented in 1994/95.

Metadata Available: No

Distribution: No

Access: Printout

Cost: NIL

For Further information:

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Date Received: June 30, 1993

EHMDAC

EHMDAC is a micro-computer based information management system which stores, retrieves and analyses data on projects, programmes and support activities in the fields covered by health and environment including drinking water supply, sanitation, and water resources. The system presents a tool for using readily available country data to assess how effectively resources are being utilized and to guide management decisions on future priorities.

Database Name:	Environment and Health Information for Management of Development Activities
Type:	Text
Created:	1991 (present version)
Size:	5000 records
Update:	Continuously
Growth:	500 records
Language:	English, Spanish (French foreseen)
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	FOXPRO2
Data Standards:	Yes
Metadata Available:	No
Distribution:	Diskette - National and regional agencies, ministries, planning institutions.
Access:	Diskette
Cost:	N/A

For Further information:

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EMail: INTERNET:AHMAN@WHO.ARCOM.CH

Date Received: June 1, 1993

FAO-GIS

The GIS-unit of FAO has a number of digitized maps, among which: soil map of the world (1:25,000,000); surface hydrography and hydrological basins of Africa (1:5,000,000); mean actual rainfall of Africa (1:5,000,000); landform surface of Africa: drainage, slopes...(1:5,000,000); and length of growing period (1:5,000,000) etc.

Database Name:	FAO-GIS
Type:	GIS Map File, Vector
Created:	1985
Size:	~1200 MB of Cartographic and attribute data.
Update:	~203 thematic maps per year
Growth:	~100 MB per year
Language:	English
Electronic Form:	Yes
Hardware:	VAX, INFO
Software:	N/A
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database.
Distribution:	Yes, Digital Soil Map of the World available to everyone. Diskette
Access:	*Request approved by AGLW-FAO,* Diskette
Cost:	It depends on the data request; Digital Soil Map of the World $1000US

For Further information:

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        5782610

EMail: N/A

Date Received: May 10, 1993

FISHSTAT PC

The system consists of an integrated set of microcomputer programs and databases of fishery time series. It operates on IBM-compatible microcomputers under MS/DOS. It allows for various data selection functions, statistical analyses and graphical presentation of fishery time series.

Database Name: A microcomputer system for the statistical analysis of fishery time series.

Type: Numeric

Created: 1992

Size: 12,000 records

Update: Yearly

Growth: Stable

Language: English

Electronic Form: Yes

Hardware: IBM-PC or Compatible

Software: N/A

Data Standards: Yes

Metadata Available: No

Distribution: Yes, Specialized users of fishery statistics. Diskette

Access: Diskette

Cost: No cost at present

For Further information:

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EMail: N/A

Date Received: May 10, 1993

GEMS/WATER

Global Environment Monitoring System / Water addresses global issues of water quality through a network of monitoring station in rivers, lakes, reservoirs and groundwater on all continents. Emphasis is placed on comprehensive data interpretation and assessment of global/regional water quality issues such as : drinking water supplies; agriculture; industrial impact and discharge information. The data is received by the UNEP Collaborating Centre were it is housed, analyzed and archived.

Database Name:	Global Environment Monitoring System / WATER
Type:	Factual / Numeric, GIS Map Files (Raster)
Created:	1977
Size:	32,104 records
Update:	Frequently
Growth:	N/A
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible, Mainframe
Software:	RAISON
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database.
Distribution:	No
Access:	Restricted
Cost:	No cost.

For Further information:

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EMail: N/A

Date Received: June 1, 1993

GRDC

Data Bank collects global runoff data from any nation. Discharge data for daily + monthly flows. Additionally, river basin data are stored. Information is distributed on written request to national, international organizations, programmes and individuals. Database is PC-oriented, under UNIX, using INFORMIX as core system.

Database Name:	Global Runoff Data Centre
Type:	Factual/Numeric
Created:	1987
Size:	3070 stations from 140 countries.
Update:	N/A
Growth:	N/A
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible, Mainframe under UNIX
Software:	Informix - Data Bank with SQL Query language.
Data Standards:	No
Metadata Available:	Yes, stored as part of the database.
Distribution:	Printout, Diskette, Tape - the GRDC as a whole is not distributed, but parts of it.
Access:	Printout, Diskette, Tape - Part of data base only on written request for specified purpose.
Cost:	Nil: to developing countries. Others: nominal cost for diskettes

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EMail: N/A

Date Received: June 1, 1993

HAZARDS

Database on water-related natural disasters in Latin America and the Caribbean.

Database Name:	HAZARDS
Type:	Factual / Numeric
Created:	1985
Size:	~500 records
Update:	Not regularly
Growth:	N/A
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	Paradox
Data Standards:	No
Metadata Available:	No
Distribution:	No
Access:	Diskette
Cost:	N/A

For Further information:

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       56 2/2081946

EMail: N/A

Date Received: June 1, 1993

HIDRO

References to research institutions (general information, research areas, infrastructures, human resources, international relations, etc.) in hydraulics and hydrology in Latin America and the Caribbean.

Database Name:	Hydraulics and hydrology
Type:	Referral
Created:	1990
Size:	80 records
Update:	Annual
Growth:	15 records per year
Language:	English / Spanish
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	Mini Micro CDS/ISIS
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database
Distribution:	Yes, National IHP committees and specific counterparts. Printout, Diskette
Access:	On-Line, Printout, Diskette
Cost:	New status under UNESCO/World Bank LACHYCOS project

For Further information:

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Date Received: April 14, 1993

HSDB.stat

The HSDB.stat is a computerized database system designed to store, process and retrieve global statistical data on human settlements, which covers 25 topics regarding demography, land use, economy, housing, infrastructure and service. It contains 73 data files (tables) under the topics.

Database Name:	Human Settlements Statistical Data Base
Type:	Numerical
Created:	1991
Size:	It contains 73 data tables; the number of records differ by table ranging from 25 records to 1669 records.
Update:	Every Year
Growth:	N/A
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	It includes software as well as data, but, if dBaseIII is provided, HSDB.stat can go into dBaseIII operations.
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database.
Distribution:	Diskette - Governments, international organizations and selected non-governmental institutions and organizations.
Access:	Diskette - Approved by Chief of Research and Development Division, HABITAT.
Cost:	No cost if approved by responsible officer.

For Further information:

Mr. Guenter Karl or Mr. Atsushi Koresawa
United Nations for Human Settlements (HABITAT)
P.O. Box 30030
Nairobi, KENYA

Phone: (254-2) 230800/520600

Fax: (254-2) 226473/226479

EMail: N/A

Date Received: June 30, 1993

HOMS

Technology transfer system for the technology used by hydrologists. "Components" (computer software, manuals, instruments) are contributed by National Hydrological Services and listed in the HOMS Reference Manual. Users may request components from contributors.

Database Name:	Hydrological Operational Multipurpose System
Type:	Text
Created:	1981
Size:	429
Update:	Annual
Growth:	Roughly stable, but c.30 records/year deleted, added or amended.
Language:	English with some translation to F,R,S.
Electronic Form:	Yes
Hardware:	Mainframe
Software:	Local document handling system P.C. based version under development.
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database; description of the system.
Distribution:	Printout, HOMS National Reference Centres of participating countries, UN agencies, technical cooperation projects.
Access:	Printout
Cost:	N/A

For Further information:

Director
Hydrology and Water Resources Department
World Meteorological Organization
P.O. Box 2300
CH 1211 Geneva 2, SWITZERLAND

Phone: +4122 7388111

Fax: +4122.734.82.50

EMail: JBMILLER@.UNICC.BITNET

Date Received: June 1, 1993

HYD

References to institutions carrying out scientific and technological research and development activities, projects and programmes in hydrology and water resources in Latin America and the Caribbean.

Database Name: HYD Directory

Type: Referral

Created: 1990

Size: 350 records

Update: Monthly

Growth: 50 records per year

Language: Spanish / English

Electronic Form: Yes

Hardware: IBM-PC or Compatible

Software: DBase / Clipper

Data Standards: Yes

Metadata Available: Yes, stored as part of the database

Distribution: Yes, National IHP committees and specific projects. Printout

Access: On-Line, Printout

Cost: New status under UNESCO/World Bank LACHYCOS project

For Further information:

Carlos A. Fernández-Jáuregui
UNESCO/ROSTLAC (Regional Office for Science and Technology for Latin America and the Caribbean)
Avenida Brasil 2697
P.O. Box 859
11000 Montevideo, URUGUAY

Phone: 772023

Fax: (598-2)772140

EMail: UHCFJàFRUNES21

Date Received: April 14, 1993

HYDROGEOLOGICAL MAPS

The objective of hydrogeological maps is to identify groundwater resources available in the region by establishing hydrogeological cartography according to scales and techniques appropriate for the countries, indicating water availability and quality.

Database Name:	HYDROGEOLOGICAL MAPS
Type:	Factual / Numeric + maps
Created:	1990
Size:	33 records (one per country in the region)
Update:	Annual
Growth:	2 records per year
Language:	Spanish / English
Electronic Form:	No
Hardware:	N/A
Software:	N/A
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database
Distribution:	Yes, specific counterparts. Report
Access:	Document
Cost:	New status under UNESCO/World Bank LACHYCOS project

For Further information:

Carlos A. Fernández-Jáuregui
UNESCO/ROSTLAC (Regional Office for Science and Technology for Latin America and the Caribbean)
Avenida Brasil 2697
P.O. Box 859
11000 Montevideo, URUGUAY

Phone: 772023

Fax: (598-2)772140

EMail: UHCFJàFRUNES21

Date Received: April 14, 1993

HYDROEXPERTS

Specialist in the field of hydrology and hydrogeology (with field(s) of specialization following the standards of the American Institute of Hydrology).

Database Name:	Hydrologists and hydrogeologists in LAC
Type:	Referral
Created:	1992
Size:	450 records
Update:	Annual
Growth:	N/A
Language:	English / Spanish
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	Mini Micro CDS/ISIS
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database
Distribution:	Yes, National IHP committees and specific projects. Printout, Diskette
Access:	On-Line, Printout, Diskette
Cost:	New status under UNESCO/World Bank LACHYCOS project

For Further information:

Carlos A. Fernández-Jáuregui
UNESCO/ROSTLAC (Regional Office for Science and Technology for Latin America and the Caribbean)
Avenida Brasil 2697
P.O. Box 859
11000 Montevideo, URUGUAY

Phone: 772023

Fax: (598-2)772140

EMail: UHCFJàFRUNES21

Date Received: April 14, 1993

IEDS (Subset for Freshwater and Waste-Water)

Part of the UN-ECE Environmental Statistical Database. Includes one part for Freshwater Quality and one part for Waste-Water.

Database Name:	International Environmental Data Service, part of the UN-ECE Environmental Statistical Database
Type:	Factual / Numeric
Created:	1992
Size:	Freshwater Quality 3735 records , Waste-Water 177 records
Update:	N/A
Growth:	N/A
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	Microsoft Access
Data Standards:	Yes
Metadata Available:	Yes, not part of the database
Distribution:	No
Access:	Printout, Diskette
Cost:	To be negotiated

For Further information:

Dr. Andreas Kahnert
UN-ECE
Place des Nations,
CH - 1211,
Genève 10

Phone: (22) 917 41 59

Fax: 917-0040

EMail: N/A

Date Received: May 26, 1993

INFOHYDRO

Based on the information provided by WMO's Members, INFOHYDRO contains six parts: International organizations dealing with hydrology and water resources; Principal river and lake basins of the world; National agencies dealing with hydrology and water resources; Hydrological observing stations/precipitation, evaporation, level, discharge, sediment in water quality, groundwater; Hydrological data banks; and International data banks related to hydrology and water resources.

Database Name:	Hydrological Information Referral Service
Type:	Factual/Numerical
Created:	1987
Size:	177 countries, 496 national Hydrological Services.
Update:	Continual
Growth:	According to new countries joining WMO.
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	dBaseIII+
Data Standards:	No
Metadata Available:	No
Distribution:	Printout, Diskette - WMO Members, UN and specialized agencies involved in hydrology and water resources, international river basin commissions and NGOs with whom WMO has working agreement. Publication for sale.
Access:	Printout, Diskette
Cost:	INFOHYDRO Manual: SFR 50., Diskette: cost price

For Further information:

Dr. S. Pieyns
World Meteorological Organization
41 Avenue Guiseppe Motta, Case postale No. 2300
CH 1211 Geneva 2, SWITZERLAND

Phone: (4122) 7308111

Fax: (4122) 7342326

EMail: JBMILLER@UNICC.BITNET

Date Received: June 1, 1993

INFOTERRA

Agricultural resources; ecology; ecosystems; energy resources; environmental management; environmental protection; human settlements; industrial wastes; land use; natural resources. nature conservation; pollution; waste management; water resources.

Database Name:	INFOTERRA
Type:	Bibliographic; controlled vocabulary; full text.
Created:	1976
Size:	6,000
Update:	Biannually
Growth:	N/A
Language:	English, French, Russian, Spanish
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	CDS/ISIS, COBOL; PL/1
Data Standards:	N/A
Metadata Available:	N/A
Distribution:	CD-ROM; COM; Diskette; magnetic tape; printout
Access:	UN system organizations; Government focal points; external users with restrictions.
Cost:	N/A

For Further information:

Mr. W. Lee, Director
INFOTERRA
UNEP
P.O. Box 30552
Nairobi, KENYA

Phone: + 254 233 3930

Fax: + 254 252 0711

EMail: ICC CALL/MAIL,INFOTERRA

Date Received: September 17, 1993

NRDB (for ESCWA)

Mineral resources; water resources. ESCWA. Energy and Natural Resources Division. Coverage: Regional (Western Asia).

Database Name:	Natural Resources Data Bank for the ESCWA Region
Type:	Numeric
Created:	Development stage
Size:	N/A
Update:	N/A
Growth:	N/A
Language:	English
Electronic Form:	N/A
Hardware:	N/A
Software:	N/A
Data Standards:	N/A
Metadata Available:	Yes.
Distribution:	Printout
Access:	UN system organization.
Cost:	N/A

For Further information:

Mr. Ahmad Radjai, Chief
Natural Resources, Science and Technology
Division (NRSTD)
ESCWA
P.O. Box 27
Baghdad, IRAQ

Phone: + 964 1/556 4282 (ext. 579)

Fax: N/A

EMail: N/A

Date Received: September 17, 1993

OTM

Summary description of relevant techniques (guidelines, software) that are in the public domain or can be obtained at nominal cost.

Database Name:	Inventory of Proven Operational Techniques and Methods in Development and Management of Water for Agriculture.
Type:	Factual / Numeric
Created:	1990
Size:	70 per year
Update:	once a year
Growth:	20 records per year
Language:	English (French and Spanish)
Electronic Form:	Yes
Hardware:	N/A
Software:	dBase IV
Data Standards:	No
Metadata Available:	No
Distribution:	Yes, FAO Representatives, Field Staff. Report
Access:	Printout
Cost:	No Cost

For Further information:

Wulf Klohn
Food & Agriculture Organization of the United Nations
Viale delle terme di Caracalla,
00100 Rome, ITALY

Phone: 5797-4543

Fax: 5797 3152
        5797 5155
        5782610

EMail: N/A

Date Received: May 10, 1993

PC-CitiBase

Urban data about cities with more than 100,000 population. Covering a wide range of topics such as population and its characteristics, households, land and its uses, housing and housing facilities, infrastructure and services which includes access to water and environment.

Database Name:	PC-CitiBase
Type:	Factual/Numeric
Created:	1993 (still in progress)
Size:	Large database (60 records per city per year approximately)
Update:	Yearly
Growth:	· Unknown as yet.
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	FOXPRO
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database; provided by Development software.
Distribution:	Diskette, member countries and interested organizations.
Access:	Diskette, but not before II Quarter of 1994.
Cost:	No cost.

For Further information:

Mr. G.O. Karl,
Coordinator, City Data Programme
UNCHS (Habitat)
P.O. Box 30030
Nairobi, KENYA

Phone: (254-2) 230800/520600

Fax: (254-2) 226473/226479

EMail: N/A

Date Received: June 30, 1993

SISUA

Contains information on dams and reservoirs; paper and pulp industries, oil refineries, iron and steel, and non-ferrous metal industries; hydro and thermoelectric plants (location, capacity, etc.); and demographic data. Database on water use in Latin America and the Caribbean.

Database Name:	Sistema de Información sobre los Usos del Agua
Type:	Factual / Numeric
Created:	1985
Size:	~4000 records
Update:	Not regularly
Growth:	N/A
Language:	English / Spanish
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	Paradox
Data Standards:	Yes
Metadata Available:	Yes, not part of the database
Distribution:	Report, ECLAC documents
Access:	Diskette
Cost:	N/A

For Further information:

Terence Richard Lee
Division of Natural Resources and Energy, ECLAC
Edificio Naciones Unidas,
Avenida Dag Hammarskjöld s/n,
Santiago, Chile
CEPAL, Casilla 179-D,
Santiago, CHILE

Phone: 2085051
        2061519

Fax: 56 2/2080252
        56 2/2081946

EMail: N/A

Date Received: June 1, 1993

SWB

The objective of the water balance is to quantify the region's available water resources, establishing their distribution in time and space through the assessment of the parameters of the water balance equation.

Database Name:	Surface water balance
Type:	Factual / Numeric + map
Created:	1990
Size:	33 records (one per country in the region)
Update:	Annual
Growth:	2 records per year
Language:	Spanish / English
Electronic Form:	No
Hardware:	N/A
Software:	N/A
Data Standards:	Yes
Metadata Available:	Yes, stored as part of the database
Distribution:	Yes, specific counterparts. Report
Access:	Document
Cost:	New status under UNESCO/World bank LACHYCOS project

For Further information:

Carlos A. Fernández-Jáuregui
UNESCO/ROSTLAC (Regional Office for Science and Technology for Latin America and the Caribbean)
Avenida Brasil 2697
P.O. Box 859
11000 Montevideo, URUGUAY

Phone: 772023

Fax: (598-2)772140

EMail: UHCFJaFRUNES21

Date Received: April 14, 1993

UNEP/GRID

Georeferenced environmental data covering a wide variety of themes and geographic areas, including from global down to sub-national levels. A list of water-related datasets held by GRID at various scales is attached.

Database Name: UNEP/GRID, Global Resources Information Databases

Type: GIS Map File (Vector, Raster, Statistical)

Created: since mid 1985

Size: Up to 100 global data sets; 1000s of continental, regional, national and sub-national data sets.

Update: Varies depending on data set.

Growth: 100s of data files per year.

Language: Digital data, but English for documentation.

Electronic Form: Yes

Hardware: IBM-PC or Compatible, various Workstations, IBM Mainframe

Software: Various GIS and Image Processing (IP) Systems

Data Standards: Yes

Metadata Available: Yes, not part of the database.

Distribution: Diskette, Tape, Optical Disk, Analog Form (plot maps) - any and all non-commercial / non-private users.

Access: Diskette, Tape, Optical Disk, Analog Form (plot maps) - At least, portions thereof. Under conditions 10 inteded uses described; 2) user's hardware/software described (and media needed)

Cost: Provision of necessary media (diskettes, tapes etc.) only.

For Further information:

Dr. Harvey Croze, GRID-PAC Coordinator
United Nations Environment Programme
Global Resource Information Database
P.O. Box 30552
Nairobi, KENYA

Phone: (2542) 520 600

Fax: (2542) 226 491

EMail: HCROZE@NASAMAIL.NASA.GOV,   UNEP.HG.GRID@CGNET.COM

Date Received: June 1, 1993

W.A.C.

Directory of Water Related Meetings.

Database Name:	Water Calender
Type:	Referral
Created:	1992
Size:	200 records
Update:	Twice in one year
Growth:	20 records per year
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	UNESCO CDS/ISIS
Data Standards:	Yes
Metadata Available:	Yes, not part of the database
Distribution:	Yes, Water Related International Association UNESCO's IHP-167 National Committees. Printout and Diskette
Access:	Printout
Cost:	No Cost

For Further information:

Mrs. A. Aureli
UNESCO - Water Science Division
1 Rue Miollis, 75015
Paris, FRANCE

Phone: 33-1-45683995

Fax: 45 67 5869

EMail: SCHY1 @ FRUNES 21.earn

Dated Received: May 13, 1993

WASAMS

The system contains information on a country by country basis on the status of water supply and sanitation to the population. The information includes : three Core Indicators: 1) Coverage, 2) Funding of construction and rehabilitation and 3) Monies allocated to operation and maintenance of systems.

Database Name: Water Supply and Sanitation Monitoring System

Type: Factual/Numeric, Map

Created: 1990

Size: 12000

Update: Yearly

Growth: N/A

Language: English, French, Spanish, (Portuguese and Arabic under preparation)

Electronic Form: Yes

Hardware: IBM-PC or Compatible

Software: FOXBASE+, EPI MAP

Data Standards: No, data entered as received from Governments.

Metadata Available: Yes, source and indication of accuracy of data requested in questionnaire.

Distribution: Report, Printout, Diskette - Un Agencies and any others as requested. Annual report prepared for wide distribution.

Access: Diskette, no restrictions

Cost: NIL

For Further information:

Dennis B. Warner, Manager
Community Water Supply and Sanitation Unit
Division of Environmental Health
World Health Organization
Avenue Appia, CH 1211 Geneva 27, SWITZERLAND

Phone: 791 3543

Fax: 791.07.46

EMail: Pfister@WHO.ARCOM.CH

Date Received: June 1, 1993

WTPLL

Database on water pollution problems in Latin America and the Caribbean.

Database Name:	WTPLL
Type:	Factual / Numeric
Created:	1987
Size:	~800 records
Update:	Not Regularly
Growth:	N/A
Language:	English
Electronic Form:	Yes
Hardware:	IBM-PC or Compatible
Software:	Paradox
Data Standards:	No
Metadata Available:	No
Distribution:	No
Access:	Diskette
Cost:	N/A

For Further information:

Terence Richard Lee
Division of Natural Resources and Energy, ECLAC
Edificio Naciones Unidas,
Avenida Dag Hammarskjöld s/n,
Santiago, Chile
CEPAL, Casilla 179-D,
Santiago, CHILE

Phone: 2085051
2061519

Fax: 56 2/2080252
56 2/2081946 .

EMail: N/A

Date Received: June 1, 1993

Databases / Systems Listing

Database/System	Organization	Type
ACCIS	U.N.	Database of databases within the U.N. system
CLICOM	WMO	Management of climate data
GPCC	WMO	Global/Regional precipitation totals
EAWAS	AMREF	Water purification in Africa (human health)
GCNET	CCRS	Remote sensing data and information
AQUALINE	WRC(England)	Bibliographic, water resources management
HYDAT	USGS	Water resources management
AQUAREF	ENV. CAN.	Aquatic sciences & water resources management
DUNDIS	U.N.	Database under ACCIS
HEM	UNEP\GEMS	Survey of Organizations

WATER-RELATED
SOFTWARE

An inventory of specialty software that is used by, or available to,
UN agencies for creating, handling, interpreting or presenting data in the water sector.

(Updated: September 21, 1993)

TERMS USED IN THIS QUESTIONNAIRE
<u>SOFTWARE</u>

DESCRIPTIVE MATERIAL: Availability of technical manuals for training and reference.

DESIGNED FOR: Primary usage.

HARDWARE: Description of hardware requirements.

WORKSTATION CAPABILITY: Can system run or be used on a workstation?

MAINFRAME CAPABILITY: Can system run or be used on a mainframe?

NETWORKING CAPABILITY: Can system run or be used on a network?

SYSTEM MAINTENANCE: Name of organization providing system support.

SOFTWARE USERS: Identify typical user group.

CDS/ISIS

UNESCO-developed software for management of data bases.

Software Name:	Mini-micro CDS/ISIS
Descriptive Material:	Yes
Designed For:	Data Management
Hardware:	IBM or Compatible 286,386 or 486; DOS operating system; EGA graphics level; 640 K RAM; 10 MB hard disk size.
Workstation Capability:	By files
Mainframe Capability:	No
Networking Capability:	No
Owernship:	Proprietary, free and under license.
System Maintained:	UNESCO
Software Users:	All national IHP committees and hydraulics and hydrology research centres.
Other Information:	The software has been standardized in the region.
Source of Software:	UNESCO Regional Office for Science and Technology for Latin America and the Caribbean (ROSTLAC) Avda Brasil 2697 11300 Montevideo Uruguay

Date Received: April 14, 1993

CROPWAT

A computer programme to calculate crop water requirement and for irrigation scheduling.

Software Name:	CROPWAT
Descriptive Material:	Yes
Designed For:	Modelling
Hardware:	IBM or Compatible 286; DOS operating system; 640 K RAM; 20Mb hard disk size.
Workstation Capability:	N/A
Mainframe Capability:	No
Networking Capability:	No
Ownership:	Proprietary
System Maintained:	No
Software Users:	FAO projects, Universities, governmental agencies and consultants in developing countries.
Other Information:	Available in English, French and Spanish.
Source of Software:	Chief, Distribution and Sales FAO Via delle Terme di Caracalla 00100 Rome, ITALY

Date Received: May 10, 1993

EHMDAC

EHMDAC is a micro-computer based information management system which stores, retrieves and analyses data on projects, programmes and support activities in the fields covered by health and environment including drinking water supply and sanitation and water resources. The system presents a tool for using readily available country data to assess how effectively resources are being utilized and to guide management decisions on future priorities.

Software Name:	Environment and Health Information for Management of Development Activities
Descriptive Material:	Yes
Designed For:	Data Management
Hardware:	IBM or Compatible 386 or 486; DOS operating system (5.0); EGA, VGA, SVGA graphics level; 550 Mb RAM; 15 Mb Hard drive.
Workstation Capability:	N/A
Mainframe Capability:	No
Networking Capability:	No
Ownership:	Proprietary, free and under license.
System Maintained:	Division of Environmental Health
Software Users:	National and regional agencies, ministries, planning institutions.
Other Information:	N/A
Source of Software:	Division of Environmental Health

I. Ahman
EHE Information Coordinator
World Health Organization
CH - 1211
Geneva 27
Switzerland

Date Received: June 1, 1993

FISHSTAT-PC

Database interrogation combined with basic statistical analyses applied on fishery time series. Presentation of results involve tabulations, graphics and data exporting for other applications software.

Software Name:	FISHSTAT-PC
Descriptive Material:	Yes
Designed For:	Data Management; Data Analysis; Data Presentation.
Hardware:	IBM or Compatible 386 or 486; DOS operating system; VGA graphics level; 2 Mb RAM; 12Mb hard disk size.
Workstation Capability:	N/A
Mainframe Capability:	No
Networking Capability:	No
Ownership:	Proprietary; Public Domain.
System Maintained:	Fishery Information, Data & Statistics Service, FAO
Software Users:	FAO and selected external users for testing purposes.
Other Information:	It is planned to release a commercial version in late 1993.
Source of Software:	Fishery Information, Data and Statistics Service

Fisheries Department
FAO
Viale delle Terme di Caracalla
00100 Rome, Italy

Date Received: May 10,1993

HSBD.stat

The HSDB.stat is a computerized database system designed to store, process and retrieve global statistical data on human settlements, which covers 25 topics regarding demography, land use, economy, housing, infrastructure and service.

Software Name:	Human Settlement Statistical Data Base
Descriptive Material:	Yes
Designed For:	Data Management, Data Analysis, Data Presentation
Hardware:	IBM or Compatible 286, 386 or 486; DOS operating System (2.11 or higher); 5.3 Mb Hard drive.
Workstation Capability:	N/A
Mainframe Capability:	No
Networking Capability:	No
Ownership:	Proprietary - free for UN members, Governments, International Organizations and non-profit (international) research institutes.
System Maintained:	UNCHS (Habitat)
Software Users:	Governments, international organizations and selected non-governmental institutions and organizations.
Other Information:	N/A
Source of Software:	Mr. Guenter Karl United Nations for Human Settlements (Habitat) P.O. Box 30030 Nairobi Kenya

Date Received: June 30, 1993

IDAMS

IDAMS includes a series of data management facilities and standard commands allowing for case (observation) and variable selection, missing data handling, data transformation, weighting of data. It also provides a wide range of statistical techniques: univariate distributions; bivariate distributions; multivariate descriptive analyses; and multivariate explicative analyses.

Software Name:	Internationally Developed Data Analysis and Management Software Package.
Descriptive Material:	Yes
Designed For:	Data Analysis, Data Management and Graphical exploration of data.
Hardware:	IBM or Compatible 286,386 or 486; DOS operating system (Version 2.1 at least); EGA graphics level; 640 K RAM; 3 M-Bytes hard disk size.
Workstation Capability:	N/A
Mainframe Capability:	Yes
Networking Capability:	No
Ownership:	Proprietary, under license.
System Maintained:	UNESCO, CII/PGI, IDAMS Development Group 1, rue Miollis, 75352 Paris Cedex 15, FRANCE
Software Users:	A number of international organizations (WHO, WMO, CEE, BERD, BIEF, ICSU, Third World Academy of Sciences, etc.) have expressed their interest and support to IDAMS. The software is used by numerous administrations and institutions of education and research in more than 125 UNESCO Member States, many of them having expressed in writing their appreciation of the quality of the product and of its usefulness.

Other Information:

The new version of Micro-IDAMS (3.0 and soonest 3.1) are user friendly, providing the user with interactive facilities for the graphical exploration and for the management of data. The statistical tools included in IDAMS have largely taken into account the latest methods of the French, Hungarian and Russian Schools, as well as the more traditional techniques of the Anglo-Saxon Schools.

IDAMS (cont'd)

Other Information (continued)

For the maintenance of IDAMS to the level of the users' needs, the Secretariat is assisted on a voluntary basis by about 15 highly qualified computer-statisticians belonging to various Schools of international reputation and having a recognized experience.

IDAMS accepts any kind of numerical data that are in the form of values for the same set of item (variables) for each of a set of cases (or observations), eg. a survey, information on school enrolment, a data base of products. IDAMS programs input and generate data in a common format known as the IDAMS dataset comprising 2 files : the data itself and some descriptive information about the variables called the dictionary.

IDAMS exists in version for mainframe and for micro computers IBM and compatible. Both versions are compatible. Moreover, the version for micro computers is equipped with a user friendly interface containing powerful editors used for data entry, dictionary and setup preparation, and printout review, facilities for graphical exploration of data and on-line help messages.

Source of Software: The IDAMS software and its documentation is provided by
UNESCO free of charge to requesting institutions and
international organizations.

UNESCO, CII/PGI, IDAMS Development Group
1, rue Miollis, 75352 Paris Cedex 15, FRANCE

Date Received: May 12, 1993

PC-CitiBase

Maintaining data on cities covering a wide range of topics and statistical variables.

Software Name:	PC-CitiBase
Descriptive Material:	No
Designed For:	Data Management, Data Analysis, Data Presentation
Hardware:	IBM or Compatible 286, 386 or 486; DOS operating System (5.0); EGA, VGA, SVGA graphics level; 2 Mb RAM; 80 Mb Hard drive.
Workstation Capability:	LANSMART
Mainframe Capability:	No
Networking Capability:	Yes
Ownership:	Proprietary - free.
System Maintained:	UNCHS (Habitat)
Software Users:	UNCHS (Habitat)
Other Information:	We have launched this project in collaboration with ISI, IULA, NUREC and UNSTAT. Database is still in the process of preparation but yet to be finalized.
Source of Software:	Mr. G.O. Karl Coordinator, City Data Programme UNCHS (Habitat) P.O. Box 30030, Nairobi Kenya

Date Received: June 30, 1993

RAISON

RAISON is a fully integrated database, spreadsheet, and graphical interpretive system with limited GIS, RPL (RAISON Programing Language), modelling and expert system capabilities. The system can be configured and adapted by the user to address a wide variety of environmental issues. Also see entry under RAISON/GEMS.

Software Name:	Regional Analysis by Intelligent Systems ON a Microcomputer
Descriptive Material:	Yes
Designed For:	Data Management; Data Analysis; Data Presentation, Modelling, Expert Systems Application.
Hardware:	IBM or Compatible 386 or 486; DOS operating system (3.1 or higher); VGA graphics level; 4 Mb RAM; Hard drive requires 5Mb for system. Recommend 20Mb for active use.
Workstation Capability:	RISC Based Systems
Mainframe Capability:	No
Networking Capability:	No
Ownership:	Proprietary, under license
System Maintained:	Environment Canada
Software Users:	Government Agencies, Environmental Consultants.
Other Information:	This is the full software package from which a smaller version RAISON/GEMS has been created for use by the GEMS/WATER programme. Links to commercial GIS package such as ARC/INFO, SPANS, and IDRISI address detailed GIS requirements.
Source of Software:	Manager, GEMS/WATER DATA Environment Canada, National Water Research Institute, 867 Lakeshore Rd., Burlington, Ontario, CANADA L7R 4A6

Date Received: June 1, 1993

RAISON/GEMS

RAISON/GEMS is a fully integrated database, spreadsheet, and graphical interpretive system with limited GIS developed to meet the requirements of the GEMS/WATER programme. The system is an application of the RAISON system designed to enhance interpretive and analytical capabilities of participating nations in the UNEP/GEMS/WATER Programme. Also see entry under RAISON.

Software Name:	Regional Analysis by Intelligent Systems ON a Microcomputer, Global Environment Monitoring System
Descriptive Material:	Yes
Designed For:	Data Management; Data Analysis; Data Presentation.
Hardware:	IBM or Compatible 386 or 486; DOS operating system (3.1 or higher); VGA graphics level; 4 Mb RAM; Hard drive requires 5 Mb for system. Recommend 20 Mb for active use.
Workstation Capability:	N/A
Mainframe Capability:	No
Networking Capability:	No
Ownership:	Proprietary, under license
System Maintained:	Environment Canada
Software Users:	Government Agencies, Environmental Consultants.
Other Information:	RAISON/GEMS was evaluated in 1992 by an international panel of experts. The evaluation was organized by UNEP with input from WHO, WMO and UNESCO. Findings of review in GEMS REPORT SERIES No. 14. Links to commercial GIS packages such as ARC/INFO, SPANS and IDRISI address detailed GIS requirements.
Source of Software:	Manager, GEMS/WATER DATA Environment Canada, National Water Research Institute, 867 Lakeshore Rd., Burlington, Ontario, CANADA L7R 4A6

Date Received: June 1, 1993

WASAMS

A Foxbase based software developed to store information on water supply and sanitation services in countries or sub-components of countries with the facility to produce reports and maps according to specifications prepared by the users. Developed by WHO and UNICEF.

Software Name: Water Supply and Sanitation Monitoring System

Descriptive Material: Yes, Guide for Managers, Technical Manual, User's Guide and Tutorial

Designed For: Data Management, Data Analysis, Data Presentation, the system has primarily been designed as a tool for sector planning and management decision-making.

Hardware: IBM or Compatible; VGA graphics level; 11 Mb Hard drive.

Workstation Capability: N/A

Mainframe Capability: No

Networking Capability: Yes

Ownership: Proprietary - free; the system has primarily been designed as a tool for sector planning, management and decision-making.

System Maintained: WHO

Software Users: National water and Sanitation Authorities, WHO and UNICEF and other UN agencies.

Other Information: This programme has been developed in the Community Water Supply and Sanitation Unit, Division of Environmental Health of the World Health Organization at its Headquarters in Geneva in collaboration with the Water and sanitation (WES) Section of the United Nations Children's Fund in New York.

Source of Software: World Health Organization (WHO), Geneva in collaboration with the United Nations Children's Fund (UNICEF), New York.

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Date Received: June 1, 1993