

PANTA RHEI

this double issue

**NEW ACTION PROGRAMMES
SOCRATES and LEONARDO**

•
**Recommendations from
EURO-WORKSHOPS
on Water Policy and RTD Issues**

Education Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the HUMAN RESOURCES and MOBILITY Programmes of the European Union (EU)

A QUARTERLY BULLETIN

N° 18/19 - MARCH - 1994

BEST

Building of Extension of Science and Technology network TECHWARE/WEEL in Central and Eastern Europe (COST-CEEC project).

CALWARE

Computer-Aided-Learning in hydraulics, hydrology and WAtER REsources technology, strand Cb project (TECHWARE).

CC

Coordinating Committee of TECHWARE.

CEC

Commission of the European Community.

CEEC

Central and Eastern European Countries.

COMETT II

COMmunity action for Education and Training for Technology, the European Community programme on cooperation between universities and industry regarding training in the field of technology (TFHR).

COMEX I

Selected experts in the field of diffusion and valorization of RTD results (DGXIII).

COST -CEEC

Cooperation in Science and Technology with Central and Eastern European Countries, programme of DGXII.

CTB

Coordinating TECHWARE Bureau in Brussels (B).

DG

Directorate-General, administrative unit of CEC (there are XXIII DGs).

EC

Executive Committee of TECHWARE.

ECTS

European Community Course Credit Transfer System (ERASMUS)

EP

European Parliament (EU).

EFTA

European Free Trade Association (member states : A, CH, FL, IS, N, S, SF).

ERASMUS

EuRopean Action Scheme for the Mobility of University Students (TFHR).

ETC

European Training Courses of TECHWARE.

EU

European Union (member states : B, D, DK, E, F, GR, I, IRL, L, NL, P, UK).

EWA Ring

JEP (TEMPUS) in the field of Environment, Water and Agricultural soils.

FORCE

FORmation Continue en Europe - Continuing Vocational Training in Europe (TFHR).

HCM

Human Capital and Mobility, sub-programme for Science, Research and Development (DGXII).

ICP

Interuniversity Cooperation Programme (ERASMUS).

IP

Intensive Programme (ERASMUS).

JEP

Joint European Project (TEMPUS).

MATECH

European Center for MAtematics and TECHnology of urban water pollution, network of HCM programme of DG XII.

NGAA

National Grant Awarding Authority providing the grants for student mobility (ERASMUS).

PEP

Personnel Exchange Programme of TECHWARE.

RTB

Regional TECHWARE Bureau.

RTD & D

Research, Technological Development and Demonstration.

SAST

Strategic Analysis for Science and Technology (DG XII).

SG

Specialist Group for preparing a future TECHWARE activity.

SME

Small- and Medium sized Enterprise.

SPES

Student and young graduate Placements for training in European industry of the water environment Sector (TECHWARE).

S&T

Science and Technology

STRANDS (COMETT)

A : Action establishing UETPs.

B : Action for transnational exchanges (students, young graduates, personnel).

C : Joint Training Actions.

D : Complementary measures.

TECHWARE

TECHnology for WAtER REsources,

sectoral UETP (COMETT, Strand A) and International Non-Profit-Making Association, with Coordinating Bureau in Brussels (B).

TECHWARE- Italia, TECHWARE-UK&IRL and TECHWARE-Vlaanderen are Regional TECHWARE Bureaus (RTB).

The symbol of TECHWARE is the **icosahedron**, associated with water in PLATO's philosophy.

TEMPUS

TransEuropean Cooperation Scheme for Higher Education, the EC-programme for education and training in CEE-Countries (TFHR).

TF

Task Force for a given activity of TECHWARE.

TFHR

Task Force Human Resources, Education, Training and Youth (CEC).

UETP

University Enterprise Training Partnership (COMETT, Strand A).

WEEL

Water Environment European Laboratories, pan-European scientific network of TECHWARE (HCM programme of DGXII).

Hydrology

The logos of the waters, or the science that deals with the waters of the earth, their occurrence, circulation and distribution, their chemical and physical properties, and their interaction with their environment, including their relations to living beings.

Water management

Planned development, distribution and use of water resources, in accordance with predetermined objectives and with respect to both quantity and quality of the water resources.

Water resources technology

The development and application of (new) technologies to increase and improve the supply both in quantity and quality, interpreted in terms of availability of surface and underground waters.

WORLD DAY FOR WATER 22 MARCH 1994

Recalling the relevant provisions of chapter 18 of Agenda 21, the General Assembly decided to declare 22 March of each year as World Day for Water to be observed starting 1993. The General Assembly invited States to devote the Day, as appropriate in the national context, to concrete activities such as the promotion of public awareness through the publication and diffusion of documentaries, the organization of conferences, round tables, seminars and expositions related to the conservation and the development of water resources and the implementation of the recommendations of Agenda 21.

(text adopted by the forty-seventh session of the United Nations General Assembly)



K.U.Leuven



V.U.Brussel

**INTERUNIVERSITY PROGRAMME IN
WATER RESOURCES ENGINEERING
(IUPWRE)**

Annex to PANTA RHEI No. 18

Katholieke Universiteit Leuven
(K.U.Leuven)
Faculty of Agricultural Sciences
Faculty of Engineering
Leuven, Belgium

Vrije Universiteit Brussel
(V.U.Brussel)
Faculty of Applied Sciences
Brussels, Belgium

WATER RESOURCES ENGINEERING

Background and justification

The task of achieving effective and sustainable use of water resources is nowadays made more difficult by the fact that water resources are developed for multiple and often competing uses such as domestic and industrial water supply, irrigation, hydropower generation, fishery, navigation and recreation. The competition for the limited water resources between the various sectors underlines the importance of adopting a holistic approach to water resources management in order to meet the global needs. The competition also highlights the fact that, apart from the obvious technical aspects, effective and sustainable development of water resources involves complex socio-economic considerations. The water related sciences, or hydrosociences, deal with the waters of the earth (surface and groundwater); their distribution and circulation (for drinking, industrial and agricultural use), their physical and chemical properties, and their interaction with the environment, including interaction with living things and, in particular, human beings. This knowledge is applied to the use and control of water resources on land areas of the earth. It is, therefore, clear that the problems related to the development of water resources are so peculiar and complex that solving them requires multi-disciplinary teams of, among others professionals, hydrologists, hydrogeologists, civil and chemical engineers, agronomists, biologists, ecologists, public health experts, geographers, economists, sociologists, and political scientists. In brief, to meet worldwide challenges of effective and sustainable use of water resources there is tremendous need for highly skilled personnel.

The objective of the IUPWRE, therefore, is to provide multi-disciplinary and professional training in water resources engineering, and to equip future personnel with the necessary technical and managerial knowledge and skills they require to design and operate water resources schemes successfully. The foregoing, is particular important for personnel from developing countries where sustainable development of water resources is more crucial now than ever before.

The IUPWRE, organized annually by the K.U.Leuven and the V.U.Brussel, aims at accomplishing the following two main goals: (i) the training of engineers and experts in specific disciplines of water resources such as surface and groundwater hydrology, irrigation, water quality management and other related disciplines; and (ii) integration of technical multi-disciplinary teams, efficiently coordinated by generalists with emphasis on management. Therefore, in the Master's degree programme in Water Resources Engineering, offered by the IUPWRE, emphasis will be on imparting knowledge and skills to trainees in three levels, namely, basic, specific and integrated. In the first level are included disciplines such as hydrology, statistics, hydraulics, ecology, hydrogeology, fundamentals of economy and water quality, computing among others. Specific disciplines refer to the various activities with water such as irrigation, water supplies, waste water treatment, hydropower generation, hydraulic works, urban drainage, flood control, soil and water conservation and general use management. The last level relates to technical disciplines that treat water resources in an integrated way. In general these range from the operation research to the legal and institutional sectors. The growing tendency of public participation in the planning process, even in the developing countries, necessitates that subjects of social, political and communication areas form part of the study curriculum. In addition, workshops on environmental and policy sciences are included to emphasize the close relationship between water quantity and water quality.

Application procedure for academic admission

When applying for admission to the Interuniversity Programme in Water Resources Engineering, candidates must send the following documents:

- the completed and signed application form (can be obtained from the Belgian Embassy/Consulate in your country, or directly from the Katholieke Universiteit Leuven or the Vrije Universiteit Brussel;
- a certified true copy of the BSc/BEng or MSc/MEng diploma/degree (or equivalent);
- a certified transcript of the candidate's academic records;
- the results of an English language test (if applicable);
- a short personal history, including work experience;
- a list of professional publications (if relevant); and
- three letters of reference.

The closing date for application is May 31st of the year proceeding the one in which the course starts.

How can I finance my education ?

The Katholieke Universiteit Leuven (K.U.Leuven) and the Vrije Universiteit Brussel (V.U.Brussel) have a limited number of scholarships for qualified students. To apply, candidates should contact the International Services of both universities (see address below). Additional scholarships are available from the General Commissariat for International Cultural Relations (Ministry of the Flemish Community) and the Belgian Agency for Development Cooperation. For information regarding your application to both these organisations, the candidate is advised to check with the Belgian Embassy/Consulate in their country. For information and/or a brochure describing some of the available scholarships and the procedures for application one can also contact directly one of the organisations (see addresses below). Furthermore, one can also apply for financial assistance from international donor organisations, such as the Training Division of the Directorate General for Development of the Commission of the European Communities, the Fellowship Division of the UN Office of Technical Cooperation, and so on.

Applicants are advised to request funding from appropriate donor agencies. To be fully informed, it is recommended to consult the UNESCO publication "Study Abroad". The sighted is an international handbook of fellowships and education exchange, offering detailed information about national and international governmental, non-governmental and private organizations offering scholarships and loans.

For further information about grants, please contact one of the following addresses, among others:

- * *International Center, Katholieke Universiteit Leuven
Naamsestraat 22, B-3000 Leuven, Belgium*
- * *Office of International Relations, Vrije Universiteit Brussel
Pleinlaan 2, B-1050 Brussels, Belgium*
- * *General Commissariat for International Cultural Relations
Trierstraat 100, B-1040 Brussels, Belgium*

- * *Belgian Agency for Development Cooperation (ABOS or AGCD)*
Marsveldplein 5, Box 57, B-1050 Brussels, Belgium
- * *Commission of the European Communities*
Directorate General for Development, Training Division
Wetstraat 200, B-1049 Brussels, Belgium
- * *UN Office of Technical Cooperation, Fellowship Division*
666 Third Avenue, New York, NY 10017, USA

Note: The deadline for submission of grant application for most organizations ranges between November 30th and January 31. If applying to ABOS/AGCD, the deadline for submission is April 30th. To be eligible for a grant, applicants must be from a developing country and not older than 30 years of age. The procedure from the day of application to the moment of registration can easily last 10 to 12 months. Therefore, it is recommended to start the process for admission and grant application in good time.

Whom to contact ?

To find out more about the IUPWRE, the K.U.Leuven and the V.U.Brussel, the living conditions in Belgium, the administrative formalities for departure and on arrival, the procedures for registration at the university and the local authorities (i.e. municipal) upon arrival, etc., please contact one of the following two addresses:

INSTITUTE FOR LAND AND WATER MANAGEMENT

K.U.Leuven Vital Decosterstraat 102
3000 Leuven Belgium
Telephone: +32-16-23 13 81
Fax: +32-16-23 06 07
Telex: 27210 kuland

LABORATORY OF HYDROLOGY

V.U.Brussel Pleinlaan 2
1050 Brussel Belgium
Telephone: +32-2-641 30 21
Fax: +32-2-641 30 22
Telex: 61051 VUBCO-B

Since the working language of the programme is English, the participants must have a good command of this language, both spoken and written English. Applicants from countries where English is not the language of instruction have to provide a TOEFL or equivalent test with a score of at least 550.

In reviewing applicants qualification, their background, motivation and experience will be taken into account.

Fees

Participants must be enrolled as students at the university, the registration fee for which is 17,200 Belgian Francs (BF) per academic year (1 US dollar is about 34 BF in August 1993). The costs for living can be estimated at 25,000 BF/month for a single student. If married with no children, one or two children the total costs for living can be estimated at 30,000 BF/month, 35,000 BF/month and 40,000 BF/month, respectively.

Fellowships

The organizers do not provide fellowships. Applicants are advised to request funding from appropriate donor agencies (national and international governmental, non-governmental and private organizations). It is recommended to contact relevant United Nations Organizations and, in general candidates, are advised to consult UNESCO publication "Study Abroad", an international handbook of fellowships and educational exchange.

Under the provisions of certain international cultural agreements, the Belgian government awards a limited number of grants to foreign postgraduate students each year (General Commissariat for International Cultural Relations, Trierstraat 100, B-1040 Brussels, Belgium; and the Administration for Development Cooperation (ABOS-AGCD), Marsveldplein 5, Box 57, B-1050 Brussels, Belgium). Information on the application procedure for the study grants from ABOS-AGCD and the General Commissariat for International Cultural Relations can be obtained from the Belgian Embassy or Consulate in the applicant's country. In general the procedure for securing grant assistance might take about a year.

Sponsorship and support

The IUPWRE is sponsored by the Belgian Administration for Development Cooperation (ABOS-AGCD), the Katholieke Universiteit Leuven (K.U.Leuven) and the Vrije Universiteit Brussel (V.U.Brussel). Support to the programme is given by the Universities of Antwerp (U.I.A.) and Ghent (U.Gent), and the Royal Meteorological Institute of Belgium (K.M.I.).

The first year of the study programme is given at the Institute for Land and Water Management of the K.U.Leuven. The second year is partially taught at the V.U.Brussel (programme options: Hydrology and Water Quality Management, sub-branch Water Supply Technology) and the K.U.Leuven (programme options: Irrigation and Water Quality Management, sub-branch Aquatic Ecology). The campus of the K.U.Leuven and the V.U.Brussel are at a distance of less than 30 kilometres, and easily accessible by public transport.

Katholieke Universiteit Leuven (K.U.Leuven) and the Vrije Universiteit Brussel (V.U.Brussel)

The K.U.Leuven was founded in 1425 and is thus the oldest catholic university in the world. At present, it is the largest university in Belgium and has an enrollment of more than 25,000 students, about 1,900 of whom are foreign students representing 100 nations. The university is located about thirty kilometres east of Brussels, the capital of Belgium. Within the university, the ancient traditions of past centuries and a dynamic outlook towards the future are combined.

The V.U.Brussel is the Flemish university in Brussels, and was founded in 1834. It is based on the ideals of the founders and education and research are based on the spirit of liberal equity: an ethical approach that rejects dogma and prejudice. The V.U.Brussel is spread over three campuses and has grown into the largest Flemish enterprise in Brussels region, with nearly 9,000 students, almost 800 administrative and technical staff and about a thousand teachers and research workers.

Both universities accommodate social services which are particularly concerned with welcoming foreign students. They provide temporarily lodging and assistance in locating more permanent housing in boarding houses or apartments. Other services offered include legal, and medical services. In addition, the International Contact Clubs of both universities offers a wide range of services to foreign students, including excursions, cultural meetings, sell of second hand clothes and rental service of furniture and household appliances, meeting rooms, etc.

Parallel activities

Apart from the post-graduate programme in Water Resources Engineering, there are several parallel activities which are developed by its supporting institutes and laboratories. These activities can be divided into the following categories: (a) PhD and postdoctoral research; (b) continuing education (short courses, e.g. the International Course on Microcomputer Applications in Water Resources Engineering and Management); (c) overseas project development; and (d) cooperation and consultancy. Most of these activities have a European dimension.

General and practical information

General and practical information of interest to foreign students is provided in a brochure that can be obtained on written request. This brochure provides information on the course structure, the subjects taught, the parallel activities of the IUPWRE, the costs of studying at the university, social services, living accommodation, medical services and insurance, recreation, climate, clothing and food in Belgium, religion, legal formalities, application to and registration at the Universities, and reception procedures.

Further information

More detailed information and application forms about the IUPWRE may be obtained on request from one of the following two addresses:

INSTITUTE FOR LAND AND WATER MANAGEMENT

K.U.Leuven Vital Decosterstraat 102
3000 Leuven Belgium
Telephone: +32-16-23 13 81
Fax: +32-16-23 06 07
Telex: 27210 kuland

LABORATORY OF HYDROLOGY

V.U.Brussel Pleinlaan 2
1050 Brussel Belgium
Telephone: +32-2-641 30 21
Fax: +32-2-641 30 22
Telex: 61051 VUBCO-B

Interuniversity Programme in Water Resources Engineering



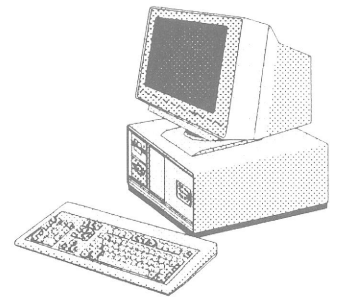
K.U.Leuven

&



V.U.Brussel

INTERNATIONAL
COURSE
ON
MICROCOMPUTER
APPLICATIONS
IN



WATER RESOURCES ENGINEERING AND MANAGEMENT

At ILWM, Katholieke Universiteit Leuven, Belgium

July 4 to September 16, 1994

Background

The key reason for the failure of irrigation and drainage schemes, and the inability to exploit surface and groundwater resources to a sustainable level is poor planning, design, system management and development. This is partly due to the inability of engineers, planners and managers to adequately quantify the effects of their interventions on the water resource system and to use these effects as a guideline for achieving a better technology and design, and to facilitate improved management.

A major constraint to the development of such a strategy is the complexity of the water resource system, a complexity that microcomputers are now able to handle. Using their computational power and graphics capability, microcomputers are able to perform sophisticated data processing and analysis, simulation and modeling of processes, freeing the engineer, the planner and the manager to concentrate on the issues, actions and consequences as related to sustainable land and water use.

Microcomputers are relatively inexpensive and increasingly more rugged and reliable. Spreadsheet and database packages can revolutionize the use and application of microcomputers in irrigated agriculture as related to its sustainability, and in the exploitation and management of water resource systems in general.

Course objectives

The global aims of the short training course are to help participants develop integrated knowledge of water resource engineering, microcomputer programming and operations, and the softwares needed to implement computer-based water management and improve administrative practices for irrigation/drainage, project planning, design and operation, and exploitation and management of surface and groundwater resource systems.

The aim will be achieved through (i) the training of participants in softwares developed for water resource development planning and design, (ii) their training in system management with special reference to microcomputer applications, and (iii) their training in spreadsheet calculations, graphics and data processing.

The training programme covers applied microcomputer use in irrigation and drainage, on-farm irrigation design and evaluation, on-farm irrigation scheduling, main system irrigation scheduling, operation, maintenance and management of irrigation delivery systems, and the modeling of surface and groundwater resource systems, and the use of geographic information system (GIS) and remote sensing in the reconnaissance, planning and management of land and water resources.

Participants are exposed to a full range of water resource engineering concepts that are handled in a user-friendly way thanks to computer applications. This integrated, process-oriented short training course develops skills for implementing computer assisted planning, design and management of water resource systems. It will utilize state-of-the-art technology developed by Belgian universities or similar friendly institutions concerned with improved irrigation/drainage system performance as related to sustainable agriculture, and the technical and environmental safe exploitation of land and water resources.

Application form for the

**INTERNATIONAL COURSE ON MICROCOMPUTER APPLICATIONS
IN WATER RESOURCES ENGINEERING AND MANAGEMENT**

Course Option A: Microcomputer applications in irrigation and drainage

Course Option B: Microcomputer applications in surface and groundwater hydrology

Course Option C: Microcomputer applications in remote sensing and GIS for land and water resources management

Introductory module - module 1 (July 4-29, 1994, 4 weeks)

Course option A, B and C - module 2 and 3 (August 1 to September 16, 1994, 7 weeks)

To be sent to :

Mrs. Greta CAMPS, Course Secretary, Institute for Land and Water Management (ILWM),
Katholieke Universiteit Leuven (K.U.Leuven), Vital Decosterstraat 102, 3000 Leuven, Belgium,
Tel.: +32-16-23 13 81, Fax: +32-16-23 06 07, Telex: 27210 kuland

Application (Please type or print)

Course applied for: Introductory module (module 1) (*) Course option A, B or C (*)

(* Delete what is not applicable

Full name : Nationality :
Place and date of birth : Sex (Male/Female) :
Highest degree attained : Place :
Organization and address :
.....

Present occupation :

Mailing address :

Phone (office) : Phone (home) :

Fax : Telex :

I have enclosed a cheque of BEF / I have applied for financial support from

Briefly state :

(a) The justification for your need to attend the course :

.....
.....
.....

(b) Your computer experience :

.....
.....
.....

COURSE C: MA in remote sensing and GIS, with application to land and water resources management

Module 2 (3.5 weeks): The module covers principles and concepts of remote sensing. Other topics are: remote monitoring of hydrological parameters; rainfall and evaporation estimation; remote sensing of soil moisture, land use patterns, cropping patterns, groundwater, rivers and lake systems.

Module 3 (3.5 weeks): The areas covered in this module are: sources of geographic data; multi-temporal and spatial databases; digital mapping and digitizing; and integrated land information systems for land and water resources development and management.

Facilities

Participants will work individually or as a pair with IBM or IBM compatible machines and will have continual access to these machines over the duration of the courses.

Course organizers

The courses are organized by the Interuniversity Programme in Water Resources Engineering [Katholieke Universiteit Leuven (K.U.Leuven) & Vrije Universiteit Brussel (V.U.Brussel), Belgium]. The courses will be taught at the facilities of the Institute for Land and Water Management of the K.U.Leuven, Vital Decosterstraat 102, 3000 Leuven, Belgium. The lecturing staff is recruited from the Institute for Land and Water Management and the Laboratory of Hydraulics, both from the K.U.Leuven, and the Laboratory of Hydrology from the V.U.Brussel. The staff has extensive experience in microcomputers with application to water resources engineering and management.

Fees

The tuition fee for course option A, B or C is 60,000 BF and 30,000 BF for the introductory module (module 1). The fee covers participation in the course including lecture documentation and study materials, access to computers, and training softwares. The cost does not include transportation or accommodation costs. Applicants are advised that approximately an additional 30,000 BF/month are required to meet accommodation expenses, subsistence and incidental expenses.

Payments of fees must be made to the IUPWRE, Vital Decosterstraat 102, 3000 Leuven, Belgium at the Bank BAC, Bondgenotenlaan 103, 3000 Leuven, Belgium, Account Number 785-5166303-88.

Fellowships

The organizers do not provide fellowships. Applicants are advised to request funding from appropriate sources like their government, project sponsors or consultancy firms. They may also wish to contact the Belgian Agency for Development Cooperation (BADC or ABOS), the EEC, World Bank, UNDP, UNESCO and FAO. Applicants for such fellowship in general should contact the government ministry in their own country that maintains contact with these organizations. All applications to BADC and the Flemish Community for grants should be routed through the Belgian Embassy in their own countries.

Application procedures

Applicants should complete and return the enclosed form by February 28, 1994. The applications should clearly state which course is being applied for. If payment is not included, a statement of sponsorship should accompany the application. Candidates will be notified of their acceptance during the month of March to allow ample time for obtaining visa, and or making other arrangements. Send your applications for admission to:

Mrs. Greta CAMPS, Course Secretary

Institute for Land and Water Management

Katholieke Universiteit Leuven
Vital Decosterstraat 102
3000 Leuven, Belgium

Tel.: +32-16-23 13 81

Fax: +32-16-23 06 07

Telex: 27210 kuland

SPES

STUDENT AND YOUNG
GRADUATE PLACEMENTS
FOR TRAINING IN
EUROPEAN INDUSTRY OF
THE SECTOR WATER
ENVIRONMENT



TECHNOLOGY FOR
WATER RESOURCES

TECHWARE

international non-profit making association

• UETP •

University Enterprise
Training Partnership
under COMETT II, the
European Community
programme on
cooperation between
universities and
industry regarding
training in the field of
technology.

WHAT ARE THE BENEFITS OF STUDENTS PLACEMENTS ?

FOR THE EMPLOYER

- COMETT student placements are cheap and easy to manage, thanks to EC grants and the support network.
- COMETT students can contribute to productivity, a benefit to small and large companies alike.
- COMETT students can introduce new ideas into the workplace, and can tackle projects which otherwise might be difficult to resource.
- COMETT students offer a company opportunities to link with higher education and with Europe.
- COMETT student's language ability can put you in touch with new market opportunities.

FOR THE STUDENT

- Placement in industry abroad enhances a student's degree course.
- A placement improves language skills, and offers experience of another culture.
- A placement improves future job prospects.
- A placement brings the satisfaction of contributing to the productivity of a firm.

FOR HIGHER EDUCATION

- More mature COMETT students are rewarding to teach.
- Staff arranging placements will make useful contact with European employers.
- Foreign interest will be aroused in an institution's Research and Development and its initial and continuing education courses.

FOR EUROPE

- COMETT fosters European awareness.
- Student placements will encourage European mobility.
- A well-trained workforce will enable industry to compete better in world markets.

DEMANDS from STUDENTS : See reverse side

WHO CAN OFFER PLACEMENTS ?

All companies, enterprises, including public administration or services, professional or scientific associations, etc. ...

WHO CAN APPLY FOR A COMETT-PLACEMENT GRANT ?

- All registered students or young graduates of an institution for higher education in EC- and EFTA-member states.
- All nationalities if the above condition is fulfilled.

THE ROLE OF TECHWARE

- TECHWARE has the responsibility to award COMETT grants to eligible trainees for placements between 3 and 12 months.
- The selection for awarding the grants and the matching between offers and demands is straightforward and explained in the SPES-Vademecum.
- An agreement between TECHWARE and the grantee is signed as soon as the enterprise has accepted the trainee-candidate.
- The COMETT grant awarded by TECHWARE varies between 200 and 300 ECU per month and is supplementary to any other grant or contribution offered by the enterprise or other organisation.

CTB
Coordinating
TECHWARE
Bureau
c/o CIBE - BIW/M
Wolstraat 70
B-1000 Brussels
Belgium

TEL
+32-2-5188893
FAX
+32-2-5026735

RTB-I
Regional
TECHWARE
Bureau Italy
c/o AMGA
Via SS. Giacomo
e Filippo
I-16122 Genoa
Italy

TEL
+39-10-83431
FAX
+39-10-8343284

RTB-UK&IRL
Regional
TECHWARE
Bureau U.K.
and Ireland
c/o HR WALLINGFORD LTD.
UK-OX10 8BA
Oxfordshire
United Kingdom

TEL
+44-491-835381
FAX
+44-491-826703

RTB-VL
Regional
TECHWARE
Bureau
Vlaanderen
c/o WEL vzw.
Marktplein 16
B-2110 Wijnegem
Belgium

TEL
+32-3-3537253
FAX
+32-3-3538991

DT93-172	I	UK,NL,DK,IRL,N	6m	Leakage treat. & supplying water treatment.
DT93-176	E	F,UK,I	6-9m	MK, EM, Management.
DT93-207	D	B,F,UK=IRL	3-4m	Computer Science and Economics.
DT93-183	B	UK,NL,DK	9m	Water Environment.
DT93-198	UK	F,E,SF	3m	Civil Engineering.
DT93-209	UK	D,B,F	3m	Civil Engineering.
DT93-195	I	E,F,IRL	5m	Hydraulics.
DT93-201	UK	F,D	3m	Civil Engineering.
DT93-199	UK	F,IRL,CH	3m	Civil Engineering.
DT93-200	UK	F,E,P	3m	Civil Engineering.
DT94-216	B	Anywhere	12m	River & Basin Management/Water Analysis.
DT94-214	UK	E, NL,F	12m	Hydraulics, Civil engineering.
DT94-215	UK	E,F,NL	12m	Hydraulics, Civil Engineering.
DT94-224	B	IRL,UK,NL	12m	Mass Communication.
DT94-213	B	NL,F	6m	Water Resources, Estuaries Management.
DT94-220	UK	F,D,E	9-12m	Marketing Management.
DT94-212	UK	F,E	3-8m	Marketing, Management & Economics.
DT94-225	E	B,F,I	3m	Geological Areas.
DT94-226	UK	I	13m	Hydraulics, Civil Engineering.
DT94-227	E	F,I,P,B	3m	Geology, Hydrology.
DT944-228	E	F,I,P,B	3m	Geological Areas.
DT94-229	UK	F,CH,E	12m	Environmental Management Technology.
DT94-230	F	IRL,UK,F	6m	Hydrology, Groundwater Exploration & Production.
DT94-219	UK	E	3-12m	Hydrological Technology, Environmental.
DT944-221	I	NL,UK,E	4m	Wastewater Treatment, Environmental Engineering.
DT94-223	F	NL,UK,IRL	3m	
DT94-217	UK	F,B,NL	3m	Hydraulic Design, Civil Engineering.
DT94-231 to 279	F	Anywhere	3m	Wastewater Treatment, Water Environment.

Fill in the form below and return to : • RTB -I if your first choice is Italy • RTB-UK&IRL if your first choice is UK or IRL
 • RTB-VL if your first choice is Belgium • CTB in any other case

TECHWARE • SPES
 Please type or use block letters

Name :
 Enterprise :
 OR University :
 Address :

 Tel : Fax :

Please send me the SPES Vademecum including application forms and prototype agreement
 full information about the STUDENT Code No. ...

Date : Signed : M.

Note for students : Allow for a period of about 6 months between this request and the start of your training.

ATTENTION : Only registered students or young graduates of an institution of higher education within the EC and EFTA countries can apply for a COMETT-placement grant.

LOCATION

The scientific and technical conference and the professional exhibition will be held concurrently and jointly in Halls 3 and 8 of the Exhibition Center in Marseilles:

Parc Chanot

Rond Point du Prado

13008 MARSEILLES

Tél : (33) 91 76 16 00

Fax : (33) 91 22 16 45

REGISTRATION FEES

12 and 13 April 1994

FFr 2,800 (inc. VAT)

14 and 15 April 1994

FFr 2,800 (inc. VAT)

Full conference from 12 to 15 April 1994

FFr 4,300 (inc. VAT)

The registration fees include:

- permanent access and participation in the sessions,
- conferences and workshops corresponding to the registration,
- conference documentation and exhibition document package containing the conference papers,
- lunches and coffee breaks,
- permanent access to the exhibition.

COMMISSARIAT GENERAL

SAFIM ORGANISATION

Parc Chanot - BP 2

13266 Marseilles cedex 8 - FRANCE

Tel. : (33) 91.76.16.00

Fax : (33) 91.22.16.45

ORGANIZATION

Association S.I.E.M.

314, Avenue du Prado

13008 Marseilles - FRANCE

Tel. : (33) 91.22.72.72

Fax : (33) 91. 22. 71.71

TRAVELLING

AIR France Marseilles

Contact : Marie Ludevic

Tel. : (33) 91 37 38 85

Fax : (33) 91 33 11 81

If there are several registrations, please fill out copies of the present form.

Name :
Company/Organization :
Address :
Postal Code : Town :
Telephone : Fax :
Forename :
Name :
ACCOMPANYING PERSON :
Forename :
Name :

TO BE RETURNED TO :
SAFIM ORGANISATION - BP 2 - 13266 MARSEILLES CEDEX 08 - FRANCE

INDIVIDUAL REGISTRATION FORM
FOR THE HYDROTOP CONFERENCE



TECHWARE
TECHNOLOGY FOR WATER RESOURCES
INTERNATIONAL NON-PROFIT - MAKING ASSOCIATION
UEFP - UNIVERSITY ENTERPRISE TRAINING PARTNERSHIP
the European Community programme on cooperation between
universities and industry regarding training in the field of technology

TECHWARE is a collaborative network in all fields of the water sector. It has a bridging function on the meso-scale and offers the member-bodies the added value of a transnational multi-disciplinary network which promotes and supports coalitions among them for green activities, e.g. within the framework of the EC and other international programmes.

TECHWARE has 190 members in 28 countries and three Regional Bureaux in Antwerp (B), Genoa (I) and Wallingford (UK).

Within the COMETT II Programme, TECHWARE organizes student and young graduate training placements, staff exchange, short courses, joint training and pilot projects including distance learning and computer-aided-learning.

TECHWARE has been contractor for Strategic Analysis in Science and Technology "Supply and Use of Freshwater Resources".

TECHWARE has published "Recommendations from EURO-WORKSHOPS on Water Policy and RTD-issues.

TECHWARE offers a forum for valorization and diffusion of research results and interfacing with enterprises, including small- and medium-sized enterprises.

TECHWARE has made contributions to the Environmental Programme for the DANUBE River Basin.

TECHWARE has set up its Pan-European scientific network WEEL for research/training synergy and for the purpose of "making good use of the scientific and technological potential of the less-favoured regions by networking them with centres of excellence in the more advanced regions..." (Explanatory Memorandum, 4th Framework Programme).



*COORDINATING BUREAU of TECHWARE c/o CIBE/BIWM,
70 rue aux Laines/Wolsstraat 70, 1000 Brussels, Belgium
tel + 32-2-518893 Fax + 32-2-5026735 telex 61927 eauwat-b for attention : techware*

HYDROTOP
94



HYDROTOP 94

an international conference on "Better Water Management" in

Marseilles 12/14 APRIL 1994

in cooperation with DG XI & DG XII
of the Commission of the European Communities,
TECHWARE (TECHnology for Water Resources)
and several leading World authorities on Water Management.

"Europe and Scientific and Technological Cooperation on Water"

President : Mr Claude Desama, President of the Committee on Energy, Research and Technology (CERT) of the European Parliament.
Coordination : European Commission, Directorate General XII "Science, Research and Development".

Thursday 14 APRIL Room 5

9h30 - Introduction by the President of the session.

- Strategic issues and framework for futures actions
by Bruno Schmitz, Directorate A "Strategy and Accompanying Measures".

10h15 - PAUSE

10h45 - Actions of the Community research programmes and of the Joint Research Center

- R&D actions in the field of Environment,
by Peter Reiniger, Directorate D "Environment".

- R&D actions in industrial technologies,
by Hervé Pero, Directorate C "Industrial and Materials Technologies".

- Measurements and testing : co-operation between laboratories for quality control in water analysis,
by Philippe Quevauviller, Directorate C "Industrial and Materials Technologies".

12h15 - LUNCH

14h00 - Others forms of Science and Research Cooperation

- Cooperation with EUREKA and with partners outside the European Community,
by Markku Warras, Directorate B "Cooperation with Third Countries and International Organisations", in association with TECHWARE (TECHnology for Water Resources).

- Research/Training synergy : the WEEL network (Water Environment European Laboratories), illustrating the actions of the "Human Capital and Mobility" programme.

■ Introduction by Franco Siccardi, University of Genova (I), co-ordinator of the WEEL project.

■ Report on activities in three Community countries,

by : Jean Cunge, IHF (F)
Michael Thorn, HR Wallingford (UK)
André Van Der Beken, TECHWARE (B)

16h00 - PAUSE

16h30 - Round table with officials, experts and industrialists, followed by general discussion.

18h30 - Conclusions, and closing remarks by the Mr. Claude Desama, President of the session.

I - Institutional aspects of water management

- 1 - The European policy, round table by DG XI of the European Commission
- 2 - Local and ecological management of water: a challenge
- 3 - Economic and financial components
- 4 - Informing users and consumers, a right and a duty!
- 5 - Risks and crises management

II - Progress in technical management

- 1 - Process management
- 2 - Operation of distribution and collection networks
- 3 - Control and use of treatment and purification by-products

III - Better resource management

- 1 - Settling user disputes
- 2 - Overcoming shortages
- 3 - Better armed against pollution

IV - Europe and Scientific & Technological Cooperation on Water

Coordinated by General Direction XII of the European Commission.

- 1 - Strategic issues and framework for future actions
- 2 - Actions of the Community research programmes and of the Joint Research Center
- 3 - Cooperation with EUREKA and with partners outside the European Community
- 4 - Research/Training synergy : the WEEL network
- 5 - Round table and conclusions

V - Workshops

- 1 - Water quality and health
- 2 - Use of membranes for drinking and wastewater treatment
- 3 - Rainwater

VI - Aquanet day SPRINT programme

Diffusion and technology transfers in the field of urban and industrial effluent treatment in Mediterranean countries.

REGISTRATION FEES

-12-13 April 1994 x FFr 2.800,00
-14-15 April 1994 x FFr 2.800,00
-12-15 April 1994 x FFr 4.300,00

FFr
FFr
FFr

GALA DINNER

..... x FFr 400,00

FFr

ACCOMPANYING EXCURSIONS

WEDNESDAY 13 APRIL 1994
- Cassis and the Calanques x FFr 250,00
- Marseilles x FFr 200,00
- The unnamed Camargue x FFr 450,00
THURSDAY 14 APRIL 1994
- Aix-en-Provence x FFr 250,00
- Cassis and the Calanques x FFr 250,00
- Fontaine de Vaucluse + Luberon x FFr 450,00

FFr
FFr
FFr
FFr
FFr

POST-CONGRESS EXCURSIONS

- Provence and Camargue x FFr 1.500,00

FFr

HOTEL RESERVATIONS

Travelling : - By train By air
Wishes to receive : - An SNGF exhibition data sheet
- An Air Iner exhibition data sheet
Date of arrival :
Date of departure :
Number of nights :
HOTEL :
(List of hotels and deposit required)
DEPOSIT

FFr

TOTAL

FFr

METHOD OF PAYMENT

Registration fees for Settlement of the remainder must reach us at least one month before the exhibition and conference are due to begin. Payments must be made to SAFIN :
- either by bank or post office cheque (account CCR 315 40X Marseilles)
- or by bank order to :
Région, 13083 Marseille.
- Bank Code : 10096
- Account n° : 0740590036 C

CANCELLATIONS

Registration fees for cancellations before 15 January 1994 will be reimbursed less FF7400 for administrative costs. Cancellations between 15 January and 15 March 1994 will be reimbursed less 50% registration fees. After 15 registration fees will be reimbursed.



HYDROTOP
94

The Editor would like to apologize for the delay in publishing issue No.18 : PANTA RHEI is not a commercial publication and the Editor has other priority duties. Besides the regular university workload, which is the heaviest in the fall, the regular ERASMUS-ICP report and re-application, due 31 October, were followed by the COMETT call 1994 which was due 1 1/2 month earlier than in previous years. This fact is linked to the ending of COMETT II at the end of 1994, with some project-extensions into 1995.

The interested reader may find in this issue a summary and some comments on the NEW VOCATIONAL TRAINING PROGRAMME "LEONARDO",

the new action programme 1995-1999 for implementation of Article 127 of the Treaty on European Union. Also presented is the new action programme for education, called SOCRATES, for implementation of Article 126 of the Treaty. SOCRATES will still include ERASMUS, i.e. cooperation in higher education, but will also encompass school education. Most important is the increase of the budgets. The draft decision of LEONARDO is certainly a nice piece of work and the Task Force for Human Resources, Education, Training and Youth (TFHR) is to be complimented for it. We would like to quote from the "Financial Statement" p.11 : *"Particular attention must be paid to extending the competence and support capability of the operational structures in order to enable them to participate fully in the objective of rationalization and coordination and to intervene in all areas covered by the programme without creating new structures"* ... *"The quality of intervention by the network of operational structure is a direct guarantee of the quality of the partnerships established, of their extension to a larger number of countries and of the benefits of the projects put forward with a view to receiving Community support"*. These statements are reflecting exactly the concerns we have expressed in former Editorials. Therefore, we look forward with great expectations to the implementation of the new programme.

Another item of great interest is the final preparation of the Fourth Framework Programme on RTD&D. The Council of Ministers of the European

Union has decided to lower the budget proposed by the Commission. Will the European Parliament accept this lowering ? Moreover, the Parliament has the power since the Treaty on European Union, finally put into action since 1st November 1993, to amend the Programme proposals. It has done so in many respects. Nevertheless, the specific programmes are the Commission's task. The TECHWARE's RECOMMENDATIONS from EURO-WORKSHOPS regarding WATER POLICY and RTD ISSUES, enclosed in this issue, are a help and will be hopefully taken into account when the specific programmes are drafted and, in a later stage, implemented.

A new feature of PANTA RHEI is the regular report from the MATECH project of the HUMAN CAPITAL and MOBILITY Programme, coordinated by co-editor Prof. Per Jacobsen. WEEL and MATECH constitute together an important step towards a European dimension of excellence in water research.

We are happy to welcome a new co-editor Prof. I. Ijjas from the Technical University of Budapest. He will inform our readers about all what is going on in Hungary in the education and training area.

The Editor.

CONTENTS

Editorial.....	3
SOCRATES	
EDUCATION PROGRAMME	4
LEONARDO	
VOCATIONAL TRAINING PROGRAMME	5
ERASMUS.....	10
TEMPUS.....	11
COMETT-TECHWARE.....	12
TECHWARE-ETC.....	16
HCM - WEEL & MATECH.....	19
WORLD NEWS.....	22
Calendar.....	23
Miscellanea.....	26
Editors.....	27

Please post Enclosures :

- SPES
- ETC
- HYDROTOP 94
- Recommendations
EURO-WORKSHOPS
- IUPWARE
- SUMMER COURSE

FRACTALS



AU BORD DE L'EAU

I

Un lourd soleil tombait d'aplomb sur le lavoir ;
Les canards engourdis s'endormaient dans la vase,
Et l'air brûlait si fort qu'on s'attendait à voir
Les arbres s'enflammer du sommet à la base.
J'étais couché sur l'herbe auprès du vieux bateau
Où des femmes lavaient leur linge. Des eaux grasses,
Des bulles de savon qui se crevaient bientôt
S'en allaient au courant, laissant de longues traces.
Et je m'assoupissais lorsque je vis venir,
Sous la grande lumière et la chaleur torride,
Une fille marchant d'un pas ferme et rapide,
Avec ses bras levés en l'air, pour maintenir
Un fort paquet de linge au-dessus de sa tête.
La hanche large avec la taille mince, faite
Ainsi qu'une Vénus de marbre, elle avançait
Très droite, et sur ses reins, un peu, se balançait.
Je la suivis, prenant l'étroite passerelle
Jusqu'au seuil du lavoir, où j'entrai derrière elle.

Ref. : Guy de Maupassant :
"Des Vers"

Nouvelle Edition avec un portrait de l'auteur
gravé à l'eau-forte par Le Rat

Paris, Librairie Paul Ollendorff
28 bis, rue de Richelieu
1899, 214 pp.

From the information memo

Quality education for all ! The Commission proposes the

SOCRATES Programme

For a number of years, the Community's ERASMUS and LINGUA (1) Programmes have offered thousands of young people the opportunity to acquire experience of educational systems other than their own. These "ambassadors of a new Europe" have not only broadened their personal horizons, but have also contributed, through passing on their experience, to enriching the society in which they live.

To continue such initiatives beyond their present 31 December 1994 expiry date, at the same time promoting innovation at all levels of teaching, and proposing for the first time a Community action at school level, these are the principal objectives of "SOCRATES", an action programme in the educational area put forward today, Tuesday 4 January 1994, by the Commission at the initiative of Commissioner Antonio RUBERTI.

With this proposal, the Commission has concluded the process, begun with its recent "Youth for Europe III" and "Vocational Training" programme proposals, which seeks to strengthen, at the same time as simplifying and rationalizing, all existing Community actions in the areas of education, training and youth.

The triptych formed by these various programmes is an integral part of the Community's participation in the effort to adapt education and training systems within the Community, the need for which is recognized in the White Paper recently adopted by the European Council, to ensure that training supply better matches the need of the workplace, and in so doing, encourage renewed growth and greater employment within the Community. **With a proposed budget of more than 1 billion ECU over a 5 year period (1995-1999), SOCRATES will seek in particular to promote activities which all belong to the area of transnational cooperation**, involving in each case a substantial number of players from the educational world of several Community Member States.

These activities can be grouped into three categories, aimed respectively at higher education (ERASMUS), school education ("Europe at school"), and transverse measures to promote linguistic skills within the Community, open and distance learning and education, and information promotion.

Cooperation in higher education : "ERASMUS"

As well as promoting the mobility of students and teaching staff, enabling them to carry out part of their studies or training in another Member State, ERASMUS' task will be to promote the constitution of university networks linking inter-university cooperation programmes (joined curriculum development, extension of the credit transfer system etc.) in similar study areas. Encouragement will also be given to the creation of university groupings, allowing several institutions to pool their resources to better meet specific student needs, for example accommodation or the study of certain less widely used languages.

Cooperation in the area of school teaching : "Europe at school"

This programme will involve essentially encouraging the setting up of partnerships between secondary schools in different Member States for carrying out joint educational projects, in particular in the area of languages, cultural heritage, environmental protection and other topics of common interest. The programme will also set out to support the creation of networks grouping, by thematic area, the institutions involved in such partnerships, thereby facilitating the exchange of information, and the implementation or improvement of new teaching products. Finally, the programme

will seek to promote the schooling of immigrant and gypsy children, and to facilitate the skills updating of educational staff.

Measures aimed at all levels of teaching

These measures will aim to promote language skills within the Community, in particular by enabling future foreign language teachers to spend periods of immersion or assistant teaching abroad, and to promote open and distance learning, which offers substantial potential for those who, due to their geographic or personal situation, are unable to follow courses requiring their physical presence. Finally, these measures will seek to encourage the exchange of information, in particular through an extension of the EURYDICE network, and the exchange of experience through study visits for key players in educational cooperation.

At a time when all educational systems are confronted with an increased demand for quality, and in order to give everybody a real chance of personal development and integration within a broader European context, the Community is determined to make its own specific contribution in the educational area by encouraging transnational cooperation.

In order to optimize the effect, the Commission will closely link this programme with the action programme for the implementation of a Community vocational training policy put forward by the Commission on 21 December last, with structural interventions by the Community, in particular in the area of human resources, and with the socio-economic strand of the Community's IVth RTD framework programme (1994-1998).

The indicative 1995-1999 budget of more than 1 billion ECU for the Education Programme is to be compared with that allocated by the budget authority for 1990-1994, viz. 376.5 MECU for ERASMUS, 153.2 MECU for LINGUA and 70.6 MECU for the other actions to promote education, giving a total of 600.3 MECU.

The 40% increase sought for in the education budget for the 1995-1999 period reflects both the development of new activities linked to the new responsibilities placed on the Community by Article 126 of the Treaty of Maastricht (essentially in the school education sector), and the strengthening of the actions successively implemented under the ERASMUS and LINGUA Programmes.

NEW ! Vocational Training Programme

01.01.1995 - 31.12.1999

EXECUTIVE SUMMARY

1. The document comprises :

- an Explanatory Statement of 23 pages, including 53 items and one Table;
- the Draft Decision of 24 pages, including 7 Articles and 2 Annexes;
- a Financial Statement of 19 pages, including 10 items and 2 Tables.

2. EXPLANATORY STATEMENT

- The present action programmes PETRA, FORCE, IRIS, EUROTECNET and COMETT (see PANTA RHEI No. 17, September 1993, pp. 4-5), which were implemental on the basis of the Decision of 2.4.1963 laying down general principles for implementing a common vocational training policy, are rationalized into ONE new training programme, following Article 127 of the Treaty on European Union (see PANTA RHEI No. 17).

• Common political concerns are :

- a. reiteration of the fundamental importance of basic education and initial training;
- b. the need for training facilities to take on board the deep-seated changes which are taking place in skills and qualifications;
- c. increasing the capacity to anticipate;
- d. the increased role of firms and sandwich training;
- e. customising training supply;
- f. the increasing recognition of the regional element;
- g. recognition of the role of the social players.

- The Community's role is to provide impetus and innovation, while the diversity of the training systems and the responsibility of the Member States for the organisation and content of training is explicitly recognized (**SUBSIDIARITY**).
- The Commission, using a common framework of objectives, provides support for the development of transnational actions to promote the coherent development of training activities throughout the Community (**COHESION**).
- The link with other Community policies is stressed : there is a special need for operational synergy with the **Structural Funds** and with the **4th Framework Programme for Research and Technological Development (RTD)**.

3. DRAFT DECISION

• Article 2 : Definitions

- (a) "initial vocational training" is used in a general sense to denote any form of initial vocational training of non-university level, including technical and vocational training and apprenticeship, which enables young people to gain a vocational qualification recognised by the competent authorities of the Member State in which it is obtained;
- (b) "continuing vocational training" is used in a general sense to denote any vocational training engaged in by a worker in the European Community throughout his/her working life;
- (c) "firm" is used to denote large, medium-sized and small undertakings, regardless of their legal status or the economic sector in which they operate, and all types of economic activity including the social economy;
- (d) "worker" is used to denote any person having active links with the labour market, including the self-employed;
- (e) "social partners" is used to denote the employers'

organisations and trade unions recognised in each Member State for the purposes of collective bargaining, and/or their inter-industry organisations and/or national bodies involved in joint action.

- (f) "training body" is used to denote all types of public, semi-public or private establishments engaged in vocational training, further training, updating or retraining activities, regardless of the way in which they are referred to in the Member States. The term also covers autonomous economic organisations, in particular chambers of commerce and industry and/or their equivalents, and professional associations;
- (g) "university" is used to denote all types of higher-education establishment which provide qualifications or diplomas of that level, whatever they may be called;
- (h) "open and distance learning and training" is used to denote any type of non-traditional training, including the use of new information and communication technologies and services and involving advice on training and individualised tutoring;

• Article 3 : Actions to be undertaken at national level following the "Common Framework of Objectives" described in Annex I

1. Facilitating adaptation to industrial changes, especially, through vocational training and retraining

and in particular :

- a) promoting anticipation and forecasting of requirements in terms of skills and training;
- b) promoting the acquisition of new qualifications and key competences;
- c) developing continuing training with regard to the results of research and technological development programmes;
- d) encouraging training of executives and managers of SMEs, focusing on the mechanisms governing internationalisation of the economy, the rules of the single market, the new technologies and their implications.

2. Improving initial vocational training and continuing training in order to facilitate integration and reintegration into the labour market and, in particular :

- a) promoting the vocational training

of young people and their preparation for adult and working life, developing continuing vocational training and supporting innovation in the field of vocational training resulting from technological change;

- b) supporting the consolidation of vocational guidance arrangements and the diversification of training courses on offer;
- c) supporting the development of high-quality training for the designers, planners and managers of training policies;
- d) developing the freedom of training bodies to provide services in the Community, and exchanges of information and experience on obstacles to the creation of an open European area for training.

3. Facilitating access to vocational training and encouraging mobility of instructors and trainees, and especially young people and in particular :

- a) providing all young people in the Community, who so wish, with access to one, or if possible, two or more years of initial vocational training following on from their compulsory schooling on a full-time basis and leading to a vocational qualification recognised by the competent authorities in the Member State in which it is obtained;
- b) implementing common guidelines on access to continuing vocational training, the basic principle being that every worker should be able to gain access to continuing training without any form of discrimination and to benefit from it throughout his or her working life;
- c) promoting effective equality of access to continuing training for women thereby helping to open up new areas of work to them and encouraging them to return to work after a break;
- d) developing the Community dimension in training through transnational placements and promoting the mutual recognition and/or validation of the skills acquired;
- e) encouraging the development of open distance learning and training to facilitate access to training.

4. Stimulating cooperation on training between training establishments and firms and, in particular :

- a) developing a European dimension into cooperation between universities and firms as regards training in technology, their application and transfer;
- b) improving cooperation links between initial and continuing training in order to develop an approach based on life-long learning.

5. Supporting exchanges of information and experience on issues common to the training systems of the Member States and, in particular :

providing support to promote applied research into vocational training and to develop exchanges of information and experience on training and to develop exchanges of information and experience on training systems and arrangements and on qualification and certification systems.

• Article 4 : Community measures, specified in annex II.

Part A : Measures

STRAND I : MEASURES TO SUPPORT THE QUALITY OF MEMBER STATES' SYSTEMS, ARRANGEMENTS AND POLICIES

I. 1 Transnational pilot projects

(a) Design projects

Assistance in devising, developing and experimenting with transnational vocational training pilot projects.

Community support shall be forthcoming, in particular, for projects involving :

- the improvement of initial vocational training through the implementation of training programmes and modules, the recognition of acquired skills in the national systems and the training of instructors and tutors; the training of vocational qualification specialists or analysts; the implementation of projects in the vocational guidance field, including networking of vocational guidance centres; the training of guidance counsellors and specialists;
- equal opportunities between men and women in vocational training;
- the training of planners and managers of vocational training arrangements;
- the training of socio-economic players involved in contractual policy on vocational training;

(b) Multiplier-effect projects

Assistance in dissemination and transfer of training methods, products, results and tools arising from the design projects into the training systems and arrangements, including the setting up of open and distance learning and training drawing on new information and

communication technologies and leading to transferable training products, such as those developed in the context of the "General interest telematic systems - Flexible and distance learning" of the Third Framework Programme for Research and Technological Development.

1.2 Transnational placement and exchange programmes

- (a) Assistance for transnational placement programmes for young people undergoing initial vocational training, with priority being given to occupational sectors most affected by change, particularly in the context of completing the single market. Such placements shall be for short periods, from three to twelve weeks, or for long periods, from three to twelve months, where the latter form an integral part of transnational training agreements including the recognition of acquired skills.
- (b) Support for transnational placement programmes for young workers or for young people available on the labour market, aimed at equipping them with validated vocational experience or an additional qualification. Such placements shall normally last three months, and at most twelve months.
- (c) Assistance for exchange programmes for national or regional public decision-makers and organisations representing the social partners designed to foster mutual understanding of how vocational training systems and arrangements work, and the transfer of experience. This action shall be integrated into the study visit programme by CEDEFOP on the Commission's behalf.

1.3 Surveys, analyses and exchanges of comparable data

- a) Surveys and analyses on the quality of training systems and arrangements.

Community support will be provided for work developed on a transnational basis, on issues common to the Member States related to implementation of the Common Framework of Objectives set out in annex I.

The aim here shall be to help the public authorities to raise the quality and effectiveness - through a reference framework at Community level - of their activities in the field of vocational training.

It will involve :

- the setting up of a general system for anticipating training and qualification requirements;
- new training methods for SMEs;
- new types of apprenticeship or sandwich courses and of cooperation between firms and training bodies or universities;
- new methods and tools for evaluating the quality of training on offer;

- new training curricula for training designers and planners;
- the transparency, recognition and validation of vocational qualifications;
- the development of the right to training (youth credits, etc.);
- the accounting of training expenditure in national and corporate accounts, especially from the point of view of investment in training.

b) Exchange of comparable data

In close cooperation with EUROSTAT's "Education and Training Statistics" Working Party, the Commission shall systematically collect data existing in Member States, shall develop comparable concepts on the basis of work done at national level, shall consolidate the Community surveys under way (Labour Force Survey, Continuing Vocational Training Survey, etc.) and draw up a joint overall methodological framework which can be used in all Member States.

STRAND II : MEASURES TO SUPPORT INNOVATIVE CAPACITY IN ACTIONS ON THE TRAINING MARKET

II. 1 Transnational pilot projects

- a) Design projects "support for innovation in training"
Assistance for devising, developing and experimenting with transnational pilot project promoting innovation in training, in terms of instruction, content, tutoring, methods, tools, equipment, and methods of anticipating needs and assessing training.
Community support shall be forthcoming for :
- the implementation of projects related to adaptation to industrial change and changes in production systems;
 - the implementation of projects in contractual policy on continuing vocational training;
 - the implementation of projects in the field of personal development, individual career plans or skills assessment;
 - the implementation of projects related to anticipation of needs in terms of qualifications, skills and training within occupational or technological sectors;
 - the development, via transnational networks and partnerships, of transferable methods, content and products for continuing vocational training of employees;
 - the implementation of projects related to training of executives of SMEs.
- b) Design projects "training to promote the transfer of technological innovation"
The emphasis shall be on :
- the development of highly qualified human resources through quality training based on strengthened cooperation between firms and universities.
 - the quality and effectiveness of innovation and technology transfer

- support services;
- the improvement of industry's capacity to absorb new technologies, in particular SMEs and traditional sectors of industry.

Community support shall take the form of assistance for devising, developing and experimenting with transnational pilot projects to promote innovation in respect of training instruction, content, tutoring, methods, tools and equipment.

it shall be forthcoming for :

- projects for training in technology jointly operated by firms, from at least three different Community Member States, in conjunction with universities, in fields related to new technologies and their applications;
- joint projects for management training on transfer of innovative technologies;
- arrangements for open and distance learning and training making use of new training technologies and leading to transferable training products; they shall also include promotion of the activities of European centres for distance training and self-learning.

c) Multiplier-effect projects

Community support shall be forthcoming for :

- dissemination and transfer of training methods, products, results and tools developed by transnational partnerships;
- intensive short courses in training in technology, having a European dimension for rapid application of new technologies through firms/universities cooperation;
- activities aimed at producing courses and materials for open and distance learning and training, as well as the linguistic and cultural adaptation of high-quality courses to allow them to be used in Member States other than that in which they originate.

II.2 Transnational placement and exchange programme

a) Transnational programme of placements in firms for young people undergoing university training

Support for programmes of placements in firms for young people undergoing university training, within a firm in another Member State, in connection with a transnational vocational qualification project supported by cooperation between firms and universities in several Member States in the new technology field. Such placements shall normally last six months, and at most twelve months.

b) Transnational programme of placements in firms for young university graduates

Support for programmes of placements in firms for young people who have completed their university curriculum and young graduates working in their first job, within a firm in another Member State, in connection with an innovation project for SMEs forming part of the development strategy of the firm, group of firms or SME resource centres. Such placements shall normally last six months, and at most twelve months.

c) Transnational programme of exchanges between firms

Support for programmes of exchanges between firms, primarily of people in charge of training or human resources (on a part-time or full-time basis) and tutor firms, connected with the development plans of SMEs or groups of SMEs involving the use of new technologies or production processes. Such exchanges shall normally last two weeks, and at most eight weeks.

II.3 Surveys, analyses and exchange of comparable data

Surveys and analyses on the innovative capacity of players in the training market supporting innovation in training and enhancing the transfer of innovation through training, for the benefit of all players in the vocational training market.

Community support shall be forthcoming for work carried out on a transnational basis concerning :

- new methods and tools for human resource audits for SMEs and for training in SMEs;
- new forms of work organisation designed to promote the acquisition of skills;
- sectoral surveys on firms' continuing training plans and on new methods of assessing skills at the workplace;
- analysis of contractual policy on training and of the role played by the social partners in training;
- improving knowledge and circulation of information on the evolution of occupations and skills, in cooperation with the CEDEFOP;

STRAND III : NETWORK, LANGUAGE KNOWLEDGE AND SUPPORT MEASURES

This third strand includes all the activities in strands I and II and is designed to enhance the European dimension in vocational training.

III. 1 European network

- a) Support for initiatives taken by Member States to ensure the openness of the programme, facilitate access to it, strengthen the dissemination of its results and coordinate the national organising bodies and operational structures set up under the COMETT, EUROTECNET, FORCE, PETRA and

IRIS programmes.

- b) Establishment of telematic communications, a databank covering the various projects, surveys, analyses, results and products, as well as an electronic mail system. Progressive extension, both regionally and sectorally, of the European network to further promote transnational cooperation, ensure the openness of the programme and boost dissemination of its results.
- c) Implementation of European coordinating activities.

III.2 Action on the development of language knowledge

Assistance for the design and multiplier function of transnational projects aimed at drawing up large-scale linguistic audits for firms or for socio-economic groups, joint curricula, innovative teaching aids and/or recognising linguistic accomplishments achieved through the implementation of these curricula.

III.3 Support measures : information, monitoring and assessment

- a) Implementation of an overall information action on a partnership basis encompassing the Commission, the Member States and the Programme's operational structures.
- b) Monitoring and continuous assessment of the Community measures.
- c) Technical assistance required for the smooth operation of the programme, in particular support, monitoring and continuous assessment of the programme; development of transnational expertise; dissemination and transfer of the methods, products and tools devised and the results obtained.

Part B : THE COMMUNITY'S FINANCIAL CONTRIBUTION

The Community shall contribute to the funding of expenditure connected with the measures planned for Strands I, II and III.

- A. The Community's financial contribution to transnational projects may amount to 75% of expenditure, with a ceiling of ECU 100 000 per year and per project for :
 - design projects under "support for the quality of systems" (Action I.1.a), which may last three years at most;
 - design projects under "support for innovation in training" (Action II.1.a) and design projects under "training for the transfer of technological innovation" (Action II.1.b), which may last two years at most;
 - multiplier-effect projects (Action I.1.b and II.1.c), which may last one year at most.

B. The ceilings for the Community's financial contribution to the placement and exchange programmes shall be as follows :

- ECU 5 000 per beneficiary for placement of a young person undergoing initial training (Action I.2.a), a young worker (Action I.2.b) and a young person at university (Action II.2.a);
- ECU 10 000 per beneficiary for placement of a young person who has completed his/her university curriculum or a young graduate working in his/her first job (Action II.2.b);
- ECU 5 000 per beneficiary for an exchange between firms (Action II.2.c).

C. The Community's financial contribution may vary between 50% and 100% of expenditure for the network (Action III.1) and may amount to 100% of expenditure for surveys and analyses (Actions I.3 and II.3), actions related to language (Action III.2) and support measures (Action III.3).

- **Article 5 : Advisory Committee**, composed of two representatives from each Member State. Twelve representatives of the social partners shall participate in the work of the Committee as observers.

- **Article 6 : Consistency and complementarity**,

- with the Community Programme on Education (Art. 126 of the Treaty on European Union, see PANTA RHEI No. 17 and SOCRATES);
- between the operation of the vocational training programme and the intervention of the Structural Funds, especially Community Initiative Programmes,
- by coordination of activities between the programme and Fourth Framework Programme on RTD;
- through appropriate operational links between the programme and the activities within the Social Dialogue Framework at Community level;
- with assistance by the European Centre for the Development of Vocational Training (CEDEFOP).

- **Article 7 : Monitoring, evaluation and reports.**

- the Member States shall forward to the Commission a report on vocational training on 31.12.1995 and every two years from then onwards;
- the Commission shall submit to the Council, the European Parliament and the Economic and Social Committee before 30.06.1998 an interim report, and before 30.06.2000 a final report on implementation of the programme.

COMMENTS

A. The NEW VOCATIONAL TRAINING PROGRAMME will incorporate actions which were formerly spread over 5 programmes (PETRA, FORCE, IRIS, EUROTECNET and COMETT). Hence a better visibility, transparency and, hopefully, a greater efficiency will be achieved.

B. The Transnational Placements for students and young graduates are fully integrated in Strand II. This was not the case in the "Guidelines for Community Action in the field of Education and Training" (see PANTA RHEI No.17). TECHWARE has sent a letter to Prof. A. Ruberti, Commissioner for TFHR, about this issue, and seemingly with success.

C. However, Strand II does not include anymore Staff Exchange between universities and industry. It does include exchanges between firms. One wonders why this very university exchange has been omitted because this type of university-enterprise cooperation is highly recommended by IRDAC - Industrial Research and Development Advisory Committee of the Commission.

D. The role of the networks is fully recognized. It is stated : " ... particular attention must be paid to extending the competence and support capability of the operational structures in order to enable them to participate fully in the objective of rationalization and coordination and to intervene in all areas covered by the programme without creating new structures".

E. Strand I actions of the programme are new with respect to COMETT but are a continuation of actions of the other programmes PETRA, FORCE, IRIS and EUROTECNET.

SOCRATES

Indicative breakdown of the costs of the action *

Breakdown by chapter and action	1995	1996	1997	1998	1999	Total
Chapter I : Higher Education (ERASMUS)						
Action 1 : Promoting the European dimension in higher education establishments	35.5	36.6	37.6	38.4	39.4	187.5
Action 2 : European University Network	6.0	6.2	6.3	6.5	6.6	31.6
Action 3 : Financing of student mobility grants	68.4	69.5	70.9	72.4	74.0	355.2
sub-total Chapter I	109.9	112.3	114.8	117.3	120	574.3
Chapter II : School education						
Action 1 : Cooperation between schools : partnerships and networks	16.7	21.6	29.6	37.5	39.0	144.4
Action 2 : Promoting the schooling of migrant, itinerant worker and gypsy children	4.9	5.6	6.3	7.4	8.0	32.2
Action 3 : Skills updating of educational staff Cooperation between institutions and mobility grants	2.0	2.6	3.4	5.6	7.0	20.6
sub-total Chapter II	23.6	29.8	39.3	50.5	54.0	197.2
Chapter III : Transverse actions						
Action 1 : Promotion of linguistic skills	19.0	20.2	22.2	25.6	29.9	116.9
Action 2 : Promotion of open and distance learning	2.3	4.5	5.5	7.1	12	31.4
Action 3 : Promotion of information and exchange of experience	14.2	15.9	17.6	18	20.1	85.8
sub-total Chapter III	35.5	40.6	45.3	50.7	62	234.1
TOTAL programme	169.0	182.7	199.4	218.5	236	1005.6

LEONARDO

Approximate itemised breakdown of cost *

Breakdown	1995	1996	1997	1998	1999	TOTAL
Strand I (ca. 30%)						
Support for system quality and policies of Member States						
- Pilot projects	12.2	13.3	14.4	16.5	18.8	72.5
- Exchanges	24.2	25.4	26.6	27.8	29.0	133.0
- Surveys, analyses and exchanges of comparable data	5.7	5.9	6.1	6.3	6.5	30.5
Sub-total	42.1	44.6	47.1	50.6	54.3	238.7
Strand II (ca. 50%)						
Support for innovation in training operations						
- Pilot projects	42.0	44.6	47.0	50.6	54.4	238.6
- Exchanges	21.8	23.0	24.2	25.8	27.5	122.3
- Surveys, thematic analyses	4.8	5.1	5.4	5.8	6.2	27.3
Sub-total	68.6	72.7	76.6	82.2	88.1	388.2
Strand III (ca. 20%)						
Networks and accompanying measures						
- Network	13.0	13.7	14.5	15.7	16.7	73.6
- Knowledge of languages	8.7	9.2	9.6	10.4	11.1	49
- Accompanying measures	5.8	6.2	6.5	7.0	7.5	33.0
- Monitoring	3.4	3.6	3.8	4.1	4.4	19.3
Sub-total	30.9	32.7	34.4	37.2	39.7	174.9
TOTAL	141.6	150.0	158.1	170.0	182.1	801.8

* in current MECU



ERASMUS

NEWS from ERASMUS

ICP : Interniversity Cooperation Programme "Hydrology and Water Management"
Coordinator : Prof. A. Van der Beken • Address : see Editor

ERASMUS Bureau

70, rue Montoyerstraat 70
B-1040 Brussels

tel +32-2-2330111
fax +32-2-2330150

ICP-partner receives PRIZE

PANTA RHEI congratulates Prof. G. de Marsily, Université Pierre et Marie Curie, Paris VI, who received the SPA FOUNDATION Prize on 5 November 1993.

ERASMUS and LINGUA (Action II) 1993/94 DIRECTORY

ISBN 92-8826-5789-2

Price : 35 ECU, available from the sales agents of the Official Publications of the European Communities.

This new directory includes :

- Description of accepted Inter-University Cooperation Programmes (ICPs) coordinated by universities in the EC- and EFTA-Countries
- List of National Grant Awarding Authorities (NGAAs)
- Grants for Visits for Higher Education Staff
List of grantholders by subject area
- Academic Recognition
The European Community Course Credit Transfer System (ECTS)
The European Community Network of National Academic Recognition Information Centres (NARIC)
- Complementary Measures to promote Student Mobility in the Community
- Statistical tables
- Indexes
 1. ICPs by subject/Eligible State/type of cooperation
 2. ICPs by Eligible State/institution
 3. Alphabetical list of ICP programme coordinators and directors
- Erasmus Bureau Staff

Centre for European Culture

At the occasion of the Belgian Presidency of the European Union, the Royal Belgian Academy of Science, Letters and Fine Arts has set up a Centre for European Culture. The aim of the Centre is to stimulate interest in the cultural aspects of European collaboration at a time when attention is concentrated on the economic, financial, political and social aspects.

The Centre takes as its starting point that all geographical and institutional descriptions are arbitrary and therefore irrelevant. However, the Europe of values is a fascinating concept and a many-sided reality which is worthy of a cost-benefit analysis.

The principal task of the Centre is to promote, by various means including research, publications, colloquia and prizes, the critical study of criteria, beyond limits of time and space, that define:

- the European conception of human values and ethics from which present day ideas of freedom, equality and democracy have grown and which have led to an increasing concern for the rights of the individual;
- the European will to know and to do which has led in such an extraordinary way to the development of all domains of science and to the application of scientific discoveries and inventions;
- the creation and appreciation of European arts and letters both as regards their unity of style and theme and their diversity of expression;
- the dialectical tensions between the universalism of European civilisation and its numerous individual variations, between its unity and its diversity; the influence of this tension on the relation between the community and the individual, between the state and the citizen and between the people and the person.

The inauguration of the Centre took place in Brussels on 4 December 1993.

ERASMUS ICP "Hydrology and Water Management" • New Edition

Name :

Address :

requests a copy of the INFORMATION BROCHURE (second edition) and the POSTER

Date : Signature :

Return to the Editor of PANTA RHEI



Tempus

NEWS from TEMPUS

JEP : Joint European Project
Interniversity Coordinating Forum for East-West Cooperation in
the field of Environment, Water and Agricultural Soils" (EWA-Ring)
Coordinator : Prof. J. Bogardi
Wageningen Agricultural University • Department of Water Resources
Nieuwe Kanaal 11, NL-6709 PA Wageningen
tel +31-83-7084829 • fax +31-83-7084885 • telex 45015

NEW : EU TEMPUS Office

Avenue des Arts 19H
B-1040 Brussels

tel +32-2-5040711/12
fax +32-2-5040700

NEWS from EWA-Ring

Tempus Joint European Project JEP no. 2150 Interniversity Coordinating Forum for East-West Cooperation in the Area of Environment, Water and Agricultural Soils (EWA-Ring)

The main achievement for the academic year 1992/93

- 1. Student mobilities** in two directions:
West-East : 10 students
3 practical placements, 7 thesis preparations
East-West : 58 students
13 practical placements, 9 PhD students, 31 thesis preparations
- 2. Staff mobilities** in three directions :
West-East: 18 teaching assignments
East-West: 50 retraining updating mobilities
- 3. Purchase of equipment and books** for partners from eligible countries.
Total grant spent on equipment is 60913,78 ECU
- 4. Short intensive course on :**
'Agroecological aspects of water management and land reclamation'.
Venue Gödöllő, Hungary.
32 participants from Poland, Czech Republic, Slovakia, Hungary, Germany, The Netherlands and Portugal.
12 lecturers and young scientists, 8 PhD students, 12 students.
- 5. Short intensive course on :**
'Water resources conservation and pollution spread control within rural areas'.
Venue Poznań, Poland.
59 participants from Poland, Hungary, Czech Republic, Slovakia, Portugal, Germany, The Netherlands, Norway, Sweden, Belgium and Austria. 27 lecturers and young scientists and 32 students.
- 6. Procurement of the library books and additional equipment** to benefit eligible members. Total grant spent on books is 15 994,84 ECU.

JEP no.4988 - European Cooperation for Environmental Education (ECEE)

'Environmental Pollution Sources and Consequences'

This book is an assemblage of selected articles of authors from universities participating in the JEP. The aim was to explain some pollution problems of the countries involved in the programme i.e. Poland, Czech Republic, Slovakia and Hungary. This is the first of two planned books. A following book will be about the subject related remedial measures.

Price : 10 ECU without postage
20 ECU with postage

Available from:

Dr.D. Huska
University of Agriculture in Nitra
Department of Land Improvement
A. Hlinku 2
94976 Nitra
Slovakia

TEMPUS JEP no. 2150
announces :

INTERNATIONAL FIELD TRAINING ON HYDROMETRY

16 - 21 May 1994
Göd - Budapest

JEP.02150 - 93/3
TU Budapest • University of Ghent

Course objectives

All projects dealing with calculation, design or operation of hydraulic constructions and water resources management have an urgent need for reliable hydrologic data. These must be provided by well-trained and dedicated professionals. As measuring in water is a fairly complex business, there is a need for specific training. The course on hydrometric field training in Göd, somewhat 15 km North of Budapest and situated along the Danube riverside, is aimed at high quality education in different fields of hydrometric measurements. An international group of 30 students under the supervision of 14 specialized staff-members will have the unique opportunity to take part at this programme.

The Danube and its surrounding watersheds offer a most attractive natural environment while the city of Budapest can guarantee an interesting combination of science with cultural and social events.

At the end of the course an individual evaluation will be held and marks will be transferred. By this, students who have the agreement from their university, faculty or department, can gain credits by participating the course.

Course organizing committee

- Dr. L. KARDOSS
Department of Water Resources Engineering
Technical University of Budapest, Hungary
- Prof. R. VERHOEVEN
Hydraulics Laboratory, University of Ghent, Belgium

For more information:

Course secretary
Mrs. M. NECKEBROECK - DE KERPEL
Hydraulics Laboratory
Sint-Pietersnieuwstraat 41, B-9000 Gent, Belgium
Tel : +32-9-264.32.81 • Fax : +32-9-264.35.95

SHORT COURSE : MODELLING OF SEDIMENT YIELD, TRANSPORT AND DEPOSITION IN RESERVOIRS

hosted by the Warsaw Agriculture University, Poland
13-18 June 1994

Contact persons in Warsaw :

Dr. K. Banasik & Dr. S. Ignar
Chair of Hydraulic Structures
Warsaw Agricultural University
Nowoursynowska 166
PL-02-7766 Warsaw
Tel : +48-22-43-9061/1766 • Fax : +48-22-439250

SHORT COURSE : OPTIMIZATION OF WATER RESOURCES

Hosted by the Technical University of Cracow, Poland
11-17 July 1994

Contact persons in Cracow :

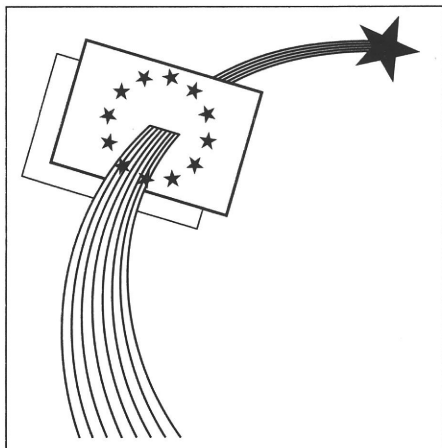
Prof. E. Nachlik & Dr. T. Maczuga
Technical University of Cracow
Warszawska 24
PL-31-155- Cracow
Tel/Fax : +48-12-33-1083

SHORT INTENSIVE COURSE : HYDROELECTRIC POWER PLANTS

within the framework of the BEST programme of EU
Hosted by the University of Coimbra, Portugal
18-28 July 1994

Contact persons in Coimbra :

For TEMPUS participants : Prof. J.P. de Lima
Dpt. of Civil Engineering
University of Coimbra
P-3049 Coimbra Cedex
Tel : +351-39-20042 • Fax : +351-39-22833
For BEST participants : Prof Sá Marques

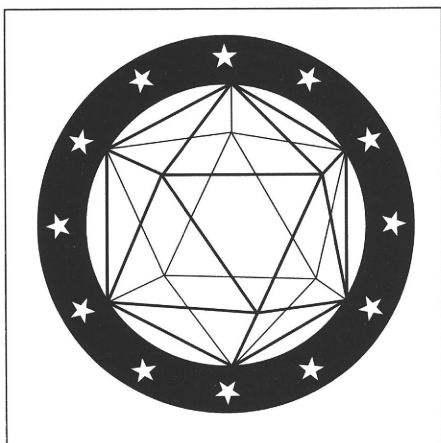


NEWS from COMETT

COMETT - TAO Technical Assistance Office

14, rue Montoyerstraat 14
B-1040 Brussels
tel +32-2-5138959
fax +32-2-5139346

UETP : University Enterprise
Training Partnership
TECHWARE
TECHnology for WAter REsources
Coordinator :
A. Van der Beken
c/o CIBE-BIWM
Wolstraat 70 rue aux Laines
B-1000 Brussels
Tel +32-2-5188893
Fax +32-2-5026735



QUALITY OF CONTINUING EDUCATION IN THE FUTURE

Antwerp, December 8th - 10th 1993

Hosted by the Ministries of Education of the Flemish and French-speaking Communities in Belgium in cooperation with the Commission of the European Communities, the conference focused on quality in the development, delivery and assessment of continuing education. Some 150 delegates attended.

Full conference proceedings will be available in the coming months. Here we report on the Round Table.

ROUND TABLE - KEY FACTORS AFFECTING QUALITY IN CONTINUING EDUCATION

The round table discussed a range of problems related to the implementation of quality systems in continuing education.

- Quality is a complex issue which must be handled carefully. As far as customer satisfaction is concerned, quality products can only be delivered by partnerships of quality. This then raises the question: what constitutes a high-quality partnership? How can we measure the effectiveness of a partnership?
- As far as quality in industry is concerned, there are a number of questions to be asked :
 - How can we respond to industrial competitiveness?
 - Which criteria could be used to measure our effectiveness in responding to customer needs?
 - How should we anticipate the training needs of industry?
- Applying a quality approach to university-industry cooperation in the field of training results in a conflict of interest at academic level. The primary mission of a university is to carry out research and to teach. Continuing education would therefore appear to be of limited interest to the academic world. Both industry and higher education have a lot to learn from each other and this issue should be
- The concept of quality in training is very much alive within large companies. This is not, however, the case for SMEs. Services and products currently available within continuing education do not meet SME requirements. While some interesting and innovative initiatives have been undertaken (e.g. large companies bringing different subcontractors together to discuss training needs), these are very much the exception. We must devise new mechanisms which take account of SME requirements.
- Joint training projects on a transnational level fail to involve the trainee at the initial stages of design and conception. This brings the collective dimension of training into question (i.e. all parties involved in the design, delivery and receiving of training). This is an aspect which receives too little attention.

regarded as a challenge for the years to come for those concerned with continuing education.

University contribution to the field of training is modest. But is it really up to universities to analyse industry's training needs? In practice, the situation is very different - the tendency is to use existing products and services which have not been tailored to the specific needs of the customer. The question is : how can we find a compromise between both extremes?

It is increasingly difficult to promote continuing education initiatives within higher education institutions given that national systems often fail to recognise them. By and large, the careers of those in the field of education are still judged by research results.

By improving the quality of training via effective training needs analysis, UETPs can make a valuable contribution to university-industry dialogue.

How important is training for improving development for SMEs ?

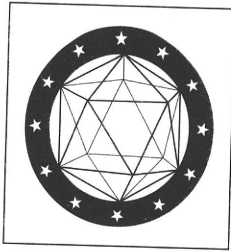
(SME : Small and Medium Sized Enterprises)

" ... It is very difficult for an SME to have a training system; to overcome this problem, SME's need to be grouped together ... on a sectoral basis and preferably with other parts of the Community ... "

this is what TECHWARE is doing

From an Interview "A new Approach to Training" - Dr. Thomas O'Dwyer, the new Director-general of TFHR.
(Ref. Innovation + Technology Transfer Newsletter of DG XIII-D, Vol. 14, 4-October 1993, p. 13-14)

PLATO and 3-D Geostatistics



The icosahedron, presently the symbol of TECHWARE and once a "perfect body" and symbol of water, the most complex element in Greek philosophy,

is not forgotten. Dr. A. Akpoji, a former student of the Coordinator, drew the editor's attention to the use of the icosahedron in G. MATHERON's "turning bands" method. When simulating a stationary stochastic process in a three-dimensional space, the procedure is prohibitive in terms of computer time. The method reduces the 3-D simulations to several independent one-dimensional simulations along N lines which are then rotated in the 3-D space. The turning band method provides multidimensional simulations for reasonable computer costs if the number N is reasonable.

The almost perfect icosahedron approximation is obtained by taking the N=15 lines joining the mid-points of the opposite edges of an icosahedron, which is the regular polyhedron with the maximum number of faces (20).

The "perfect body" is such that the 15 lines can be divided into five groups of three, each group constituting a trirectangular trihedron and each group of three lines can be obtained from the other by five successive rotations. This allows for a "perfect" application of the turning band method. Nothing new under the sun ... ?

RTB - VL

NEW REGIONAL TECHWARE BUREAU FLANDERS

RTB-VL has been established as a third regional bureau of TECHWARE, following the principles of decentralization (SUBSIDIARITY) and equilibrium (COHESION).

The initiative was taken by TECHWARE-member WEL v.z.w. (Water Energie Leefmilieu), a non-profit making association for studying water-, energy- and environment issues, publishing two monthly technical journals, one called WATER, the other called ENERGIE, and organizing conferences and symposia. E.g. WEL has organized in September 1991 in Antwerpen (B) the European Water Congress "Quality of Surface Waters in the European Community" and was co-organizer of TECHWARE's second EURO-WORKSHOP "WATER MANAGEMENT" held in Brussels, 8 - 9 June 1993.

GA/BM : GENERAL ASSEMBLY & BOARD OF MANAGEMENT MEETINGS

TECHWARE-member CEDEX (Centro de Estudios y Experimentación de Obras Públicas), Ministerio de Obras Públicas, Transportes y Medio Ambiente has kindly proposed to hold the next GA/BM meetings at its premises. The tentative date set forward is end of May 1994.

SG : NEW Specialist Group

Following the Terms of Reference (ToR) of Specialist Groups a new Specialist Group (SG) called COMBINED SEWER OVERFLOWS (CSO) Information Group.

The objective of the group is to ensure that information is available and disseminated in a form that can be used effectively to address the needs of CSO abatement. This information will be collected from and made available to all those concerned with the problems of CSO's, that is researchers, commercial organisations and municipalities. The information will be in such a form that municipalities will indicate future proposed activities in this field, researchers current activities and commercial organisations latest technology with independent assessment. This would develop into a contact sheet for all types of organisations and will form a data base for the proposed next phase of the activity. A specific project will be submitted to the EU or other international funding agencies for further research/demonstration to establish acceptable evaluation criteria for CSO's.

Secretariat of CSO Information Group :

SMISSON FOUNDATION,
Foundation Chambers
Shearwater House, Clevedon Hall Estate
Clevedon, Avon BS217RD, UK
Tel : +44-275-341440
Fax : +44-275-341413

TECHWARE • SPES

Student and young graduate
Placements for training in
European industry of the
Sector water environment

Heidi is a Belgian graduate who reports about a SPES experience :

Ein Jahr im Ruhrpott

Nach meinem einjährigen Aufenthalt in Deutschland könnte ich viele Seiten mit meinen Erfahrungen füllen. In diesem Abschnitt werde ich versuchen eine kurze Beschreibung meiner Eindrücke auseinander zu setzen.

Während die erste sechs Monate hatte ich die Möglichkeit, im Rahmen des Erasmus-Programms an der Ruhr-Universität in

Bochum zu studieren. Dort besuchte ich, als Fortführung meines Studiums die Vorlesungen der Fachbereiche Hydrologie und Siedlungswasserwirtschaft. Meine Kommilitonen ebenso wie meine Mitbewohner in meiner Wohngemeinschaft waren am Anfang eine große Hilfe beim Erlernen der für mich bisher sehr fremden Sprache. Dank meiner deutschen Freunde bekam ich auch schnell einen Überblick über die vielseitigen Möglichkeiten, die neben dem Studium von der Universität noch angeboten wurden. Mit anderen Worten, meine Abende waren reichlich gefüllt mit Aktivitäten wie Sport, Zeichnen, Kino, Theater und anderen kulturellen Veranstaltungen. Außerdem könnte ich mit dem preisgünstigen Studententicket die schönen Ecken des Ruhrgebiets erkunden.

Um mein Studium abzuschließen, machte ich von März bis August ein Praktikum beim Lippeverband in Essen. Die wesentlichen Aufgaben des Verbandes sind die Regelung der Vorflut einschließlich des Hochwasserschutzes für die Lippe und ihre Nebenläufe, die Unterhaltung des Wasserlaufes und der Ufer der Lippe, der Schutz und Förderung der Wasserhaushalt und nicht zuletzt die Reinhaltung der Lippe. In diesem Betrieb bekam ich die Möglichkeit, mich in die Aufgaben der Wasserwirtschaft praktisch einzuarbeiten und mich gleichzeitig in der deutschen Fachsprache zu verbessern. Durch die freundliche Aufnahme und Hilfsbereitschaft der Kollegen werde ich dieses Praktikum in sehr positiver Erinnerung behalten.

Zusammenfassend möchte ich sagen, daß die Zeit in Deutschland eine wertvolle Erfahrung sowohl persönlich als auch beruflich war, und daß ich jedem nur empfehlen kann, solch eine Chance zu nutzen.

Heidi De Maeyer
Brüssel

EU-ASEAN SCHOLARSHIP PROGRAMME 1994-95

TECHWARE has submitted on 17 January 1994 a dossier on STUDY AND TRAINING OPPORTUNITIES FOR ASEAN SCHOLARS in the field of WATER-ENVIRONMENT in higher education institutions and industry of Europe. The ASEAN Scholars from Brunei, Indonesia, Malaysia, Philippines, Thailand and Singapore, are 25-35 year-old graduates with several years' work experience and are selected for the EU-ASEAN Programme as being potential key figures in their respective fields and organisations.

**" Recommendations from
EURO-WORKSHOPS on
Water Policy and RTD Issues"**

This leaflet was distributed to:

- policy makers
- decision-makers and managers in the environmental sector
- scientists, engineers and researchers in the water-related sector

It aims to present in a concise way the recommendations of a series of Euro-Workshops organized throughout 1993. The Workshops were held in order to bring the results of a major EC project on strategic analysis of "RTD needs for the Supply and Use of Freshwater Resources" (SAST Project No. 6) to the attention of a wider audience.

All too often, the publication of the results of such projects remains restricted to reports that are too time-consuming for policy- or decisionmakers to read. With the distribution of this leaflet, TECHWARE hopes to contribute to a better European-wide communication between policy- and decision makers, researchers and the end-users of research results.

TECHWARE, a well-established university enterprise training partnership with a true European dimension, is among the emerging networks that implement operationally the principles of subsidiarity and cohesion in its sector.

**The FINANCIAL TIMES
reports about TECHWARE**

Researchers advise on EC priorities

Europe's top water researchers are putting the finishing touches to their recommendations on how the EC should prioritise work in its fourth research programme, covering the period 1994-1998.

The researchers, many of them members of TECHWARE, the EC organisation for research in water technology, met in Wallingford, UK, in October in the last of four such meetings over the past 18 months.

Their finalised views will be used as a basis for discussion when research ministers of member states meet in Brussels in December.

Ref. : *Water Briefing*
Issue 1, 19 November 1993

**WEEL : HYDROTOP 94
14 April 1994 at Marseille**



A major event where TECHWARE is co-organizing with the European Commission's Directorate-General for Environment and Directorate-General for Science, Research and Development an International Conference "EUROPE and SCIENCE and TECHNOLOGY for WATER MANAGEMENT". TECHWARE's major project WEEL will be in focus.

See leaflet enclosed

MEMBERS PUBLISH

Co-opted member of TECHWARE's Board of Management Dr. John RODDA, Director of the Department of Hydrology and Water Resources of the World Meteorological Organization (WMO) has published in *Hydrological Sciences Journal* 38.5 : 373-378 (1993) :

**"Towards a world hydrological cycle
observing system (WHYCOS)"**

There are considerable difficulties in assembling global hydrological data sets in near real time, data that might be used for deciding investment for sustainable water resources development and management, for environmental protection and for studying global change. Several reasons exist for these difficulties, a new one is that countries have recently been cutting back on hydrological networks and the services that operate them. This means that knowledge of the World's water resources is getting worse when the global demand for water is accelerating. By way of contrast, meteorologists have ready access to large volumes of global data, much of it in real time, principally through WMO's World Weather Watch (WWW). A World Hydrological Cycle Observing System (WHYCOS) is proposed to facilitate access to global data and support

hydrological services in need. A world-wide network of about 1000 stations is planned for the largest rivers, together with associated data bases and products to meet the needs of the users. WHYCOS would start in Africa with a 100-station network and be expanded to other regions. It is a necessary tool for averting the coming water crisis and essential to the drive towards sustainable development.

The WHYCOS initiative is a topic that follows one of the TECHWARE "Recommendations from EURO-WORKSHOPS regarding Water Policy and RTD issues" : development of methods of environmental surveillance and collection of data over large areas.

(see enclosed leaflet)

TECHWARE at the DANUBE

Within the framework of the Environmental Programme for the Danube River Basin (EPDRB), a comprehensive programme of several donors (EC, World Bank, UNDP a.o.) and coordinated by a Programme Coordination Unit (PCU) c/o CEC DGXI in Brussels, TECHWARE has taken up in the fall of 1993 two assignments :

(1) preparation of a **Workshop on water-related environmental health aspects in the catchment area of the River Danube** - Bratislava, the Slovak Republic, 16 - 19 December 1993. The results of this workshop are to be used in the development of a Strategic Action Plan for the basin.

(2) proposals on the **mechanisms for funding applied research projects in a networking perspective**, documented through TECHWARE's experience of three year successful networking activities following a bottom-up approach and a decentralized management structure.

The former assignment was commissioned by WHO-European Center for Environmental Health, the latter was commissioned by UNDP.

TECHWARE : BENEFITS AND RIGHTS OF MEMBERSHIP

- to propose projects within the objectives of TECHWARE for further discussion and to claim support from TECHWARE for their realisation, subject to approval by the Board of Management.
- to benefit from a members' discount on registration fees for all TECHWARE events. In the case of Professional and Scientific Associations and UETPs, this benefit is limited to four nominated representatives.
- to receive the TECHWARE List of Members
- to have entry into the relevant section of the Directory of Members with sections ...
- to receive all general communications issued by TECHWARE, e.g. Flash Flow.

TECHWARE SUPPORTING MEMBERSHIP

Members who assign to the association a supporting contribution of 1.000 ecu as an interest-free loan are recorded in the minutes as supporting members and are entitled to a position on the Board of Management.

TECHWARE Membership Dues * 1994

Decision of the General Assembly of Tailfer (B)
7 June 1993

- Individual Consultant285 ECU
- University, Laboratory or
Department of University,
School or non-profit Research Institute310 ECU
- Enterprise, Authority
COMETT size code S1, S2, S3
(less than 200 employees)425 ECU
- Professional or Scientific Association,
UETP's, Federation of Enterprises565 ECU
- Enterprise, Authority
COMETT size code S4, S5, S6, S7
(more than 200 employees)710 ECU
- Life Membership7500 ECU

* Not including 2.5% allowance for banking costs

FOR ALL FURTHER INFORMATION, please contact :

CTB - Coordinating TECHWARE Bureau

c/o CIBE-BIWM
Wolstraat 7, rue aux Laines
B - 1000 Brussels, Belgium
tel +32-2-5188893 • fax +32-2-5026735

Bank Accountnumber :
ASLK-CGER BANK 005-4323374-76
P.O. 1436 - Brussels 1, B - 1000 Brussels
telex 26860 • fax +32-2-139117
For easy and quick money transfer, use code :
61189SWIFT CGAK BE BB

RTB-I

Regional TECHWARE Bureau Italia

c/o AMGA,
via SS. Giacomo e Filippo 7
I - 16122 Genova, Italy
tel +39-10-83431 • fax +39-10-8343284

RTB-UK&IRL

Regional TECHWARE Bureau UK and Ireland

c/o HR Wallingford
Wallingford, UK
OX 10 8BA Oxfordshire, Great Britain
tel +44-491-835381 • fax +44-491-826703

RTB-VL

Regional TECHWARE Bureau Vlaanderen

c/o WEL vzw
Marktplein 16
B-2110 Wijnegem, Belgium
tel +32-3-3537253 • fax +32-3-3538991

EUROPEAN TRAINING COURSES

REMINDER : All TECHWARE - memberbodies can send their personnel to the short courses at discount registration fee.

SP93-09.08

Sewers Infrastructures in Mediterranean Countries : filling the gap.

Course no. 1 : The Structures.

Genova - Italy

26 - 28 April 1994

The course is the first of a sequence of three devoted to the crucial issue, of sewer renovation in Italy and other mediterranean countries. The first one will bring together specialists from the EC regions like Spain, Portugal, Italy, South of France and Greece to compare the traditional ways of sewer design and building, evaluating both regulations and technical issues. The course is intended for max. 30 participants coming from technical bodies, water agencies and municipalities.

Contact : RTB-I

SP93-09.01

Sewers Infrastructures in Mediterranean Countries : Filling the gap.

Course no. 2 : Rehabilitation and modelling.

Genova -Italy

27 - 29 June 1994

This course will bring together specialists from Northern and Southern EC Countries in order to assess and evaluate the technologies for sewer rehabilitation in ancient urban centers. One of the major issue will be the performance comparison between software package for modelling sewer systems under different storm and pollution conditions. The course is intended for max. 30 participants coming from technical bodies, water agencies and municipalities.

Contact : RTB-I

SP93-09.02

Sewers Infrastructures in Mediterranean Countries : Filling the gap.

Course no. 3 : The quality of the service.

Genova - Italy

24 - 26 October 1994

This course will deal with the tariff justification upon evidence of the quality of the service. Experiences from different countries will be compared. The course is intended for max. 30 participants coming from technical bodies, water agencies and municipalities.

Contact : RTB-I

SP93-09.03

Water Supply : The quality of the service.

Genova, Italy

25 May, 1994

This short course is designed for people managing the water price. Italy is presently changing from a water price system heavily subsidized to a fully market oriented price. The authority in charge of price control is in need of assessing, with reliable measures, the quality of the service. The course is intended for max. 30 participants coming from technical bodies, water agencies and municipalities.

Contact : RTB-I

SP93-09.04

Computer Technologies for the Analysis and Prediction of Flood Risk.

Milano - Italy

6 - 8 June, 1994

This course will focus on two major aspects of flood risk analysis, namely simulation of flood events by means of mathematical models of the rainfall runoff transformation and flood risk design prediction for a given probability level of occurrence in a distributed way over the basin. The course will introduce the participants (up to 30), to the theoretical bases of the underlying hydrological models, and the formulation and set-up of a hydrological risk oriented GIS, including the automatic network detection, and the soil type and land use information management.

Contact : RTB-I

SP93-09.05

Groundwater pollution modelling.

Cosenza - Italy

21 - 24 November, 1994

This course will focus on the analysis of parameters uncertainty in groundwater flow and pollution. The problem of parameters estimation will be addressed in both its deterministic and probabilistic approach for saturated and unsaturated flow conditions. A few case-studies will be presented together with the discussion about the significance of field-data and laboratory measurements. Contaminant transport parameters, in the saturated and unsaturated zone, will be also discussed. The course is intended for max. 30 participants coming from technical bodies, water agencies and municipalities.

Contact : RTB-I

SP93-09.06

Surface Water Pollution.

Pavia - Italy

21 - 24 June, 1994

This course will focus on the analysis and simulation of transport and transformation of contaminants in rivers, lakes and estuaries. Participants will also learn the basic usage of the WASP4 (Water Quality Analysis Simulation Program) model. Both theoretical and practical aspects of the model will be considered, and a half of the courses will be devoted to practical workshops using personal computers. The course is intended for max. 30 participants coming from technical bodies, water agencies and municipalities.

Contact : RTB-I

SP94-09.07

Network Simulation.

Pavia - Italy

13 - 17 December, 1994

This course will present an up-to-date training in the design of open channel networks. The simulation of flow in irrigation and Drainage networks and Sewer Systems is considered, in steady conditions or during transients. Catchment characterization and rainfall-runoff simulation are also considered for Drainage networks and Sewer Systems. Participants will learn how to use the MUSS model through practical applications to some case studies.

Contact : RTB-I

SP93-10.01

Computer Aided Engineering - Fluid process/network analysis to water industries.

Limerick - Ireland

September, 1994

The course will address the advance of application of CAE in fluid process/network analysis in water industries. The analysis will be of single phase fluid flow under steady state conditions and will make use of commercially available CAE software. A primary technique in this course is the use of live industrial case studies derived from the cooperating enterprises. The output will be a full text and case study application manual with appropriate CAE documentation. The course will be suitable for engineers who are playing a key industrial role in engineering project system design, evaluation, economic analysis and commissioning. The training will be biased towards the demonstration of advanced engineering application concepts.

Contact : RTB-UK

SP93-10.02

Knowledge Based Expert Systems for Water Industries.

Limerick - Ireland

November, 1994

Conventional Knowledge Based Expert Systems (KBES) will be applied to the field of engineering design in fluid flow water industry applications. Thus extending the tools available to the engineer for design as well as analysis. The course will introduce KBES techniques to experienced fluid flow engineers and show applications in the selection of pipeline components, risk assessment and fault analysis under transient flow. The course will be suitable for engineers who play a key industrial role in engineering project system design, evaluation, economic analysis and commissioning. The training will be biased towards the demonstration of advanced engineering application concepts.

Contact : RTB-UK

SP93-10.03

Sewerage Treatment for Sales/Marketing Personnel in Companies Supplying to the Water industry.

Stoke-on-Trent - United Kingdom

1994

The aim of the course is to develop the ability of the participant to understand the overall sewage treatment process, the operation of treatment elements in relation to each other and to appreciate some of the practical consequences associated with

the operation of such plant. This will enable them to better deal with decision-makers within the water industry and to provide greater assurance to prospective purchasers that both the individual and their company clearly understand a major aspect of the water company's core business. The course is designed for sales and marketing personnel who work for companies who supply equipment and services to Water Companies.
Contact : RTB-UK

SP92-10.011
Stoke-on-Trent - United Kingdom
1994

Water Treatment for Marketing Personnel in companies Supplying to the Water Industry.

The aim of the course is to develop the ability of the participant to understand the overall water treatment process, the operation of treatment elements in relation to each other and to appreciate some of the practical consequences associated with the operation of such plant, particularly in the context of the more recent European legislation. This will enable them to better deal with decision-makers within the water industry and to provide greater reassurance to prospective purchasers that both the individual and their company clearly understand a major aspect of the water company's core business. The course is designed for sales and marketing personnel who work for companies who supply equipment and services to Water Companies.
Contact : RTB-UK

SP93-10.05 Nutrient Removal during Sewage Treatment - Reasons, methods and consequences.

Stoke-on-Trent - United Kingdom
1994

The course is designed for personnel in the water industry, and allied businesses, who need to gain an overview of nutrient removal philosophy and technology. Day 1 will set out to explain the need, the potential solutions and the technology. Day 2 will draw on the benefit of visiting speakers from UK and Europe who are involved in developing nutrient removal strategy or implementing nutrient removal technology, and seek to highlight some of the practical aspects of this challenging problem.
Contact : RTB-UK

SP93-10.06 Pre-Treatment of Industrial Effluents - Concepts and applications.

Stoke-on-Trent - United Kingdom
1994

The course is designed for personnel in the water industry, allied businesses and participants on certain environmental technology graduate and masters courses, who need to gain an overview of methods available for the pre-treatment of industrial effluents. Day 1 will set out to explain the need, some of the potential solutions and the technology available. Day 2 will draw on the benefit of visiting speakers from UK and Europe who are involved in designing or operating industrial effluent pre-treatment plants, who seek to share with the course participants some of the practical problems associated with the production, use and

modification of equipment that they have experienced.
Contact : RTB-UK

SP93-10.07 Chemical Treatment of Domestic Sewage - Relations to combined sewer overflows.

Leuven - Belgium
22 - 23 September, 1994
The course is planned to highlight the potential use of chemicals to reduce pollution escape from Combined Sewer Overflows. Day 1 will start with an overview of the chemical treatment of sewage with an examination of present day developments and future research; this will then be followed with a series of case studies. Day 2 will be taken up by Workshop sessions during which teams of participants will be given problems with different sets of criteria and will be required to develop solutions which will be discussed by a panel of experts.
Contact : RTB-VL

SP93-10.11 Combined Sewer Overflows - A European perspective.

Calais - France
9 - 10 February, 1994
The objective of the programme is to introduce, to a selected delegate list, some of the different Northern European approaches to Combined Sewer Overflow legislation, procedural aspects and technological developments. Their application will be illustrated by the use of a training day during which delegates will gain hands-on experience of the problems and potential solutions which exist for a particular case study.
Contact : RTB-UK

SP93-10.12 Meeting the Challenge of the European Wastewater Directive.

Calais - France
Autumn, 1994
A two-day course for engineers and environmental scientists from both sides of the Channel. It is designed to highlight the practical interpretation of the Directives of three adjacent E.C. member states. The participants will be addressed by representatives from TECHWARE and France, Belgium and England. Time will be spent considering the practical application of the Directives by through a series of case studies.
Contact : RTB-UK

SP93-10.13 Coastal Engineering and Management.

Wallingford - United Kingdom
Part 1 : 19 April, 1994
Part 2 : 20 - 22 April, 1994
The course will cover in detail the theory and practice of coastal zone management, investigations and design of coastal protection and sea defence schemes, and the design of coastal harbours/marinas. It will present details of best practice from owners, consultants, and specialist advisors, together with results from most recent research. Part 2 of the course is aimed at engineers who already have a basic understanding of coastal hydraulics. The optional first day provides a brief introduction, or reminder, to those unfamiliar with coastal engineering, or those returning

to the subject.
Contact : RTB-UK

SP93-10.14 Real Time Control in Urban drainage.

Wallingford - United Kingdom
Part 1 : 12 April, 1994
Part 2 : 17 - 18 May, 1994
Part 1 of this series is programmed to show those managers and engineers how Real Time Control may be used to solve immediate and long-term operational problems through the presentation of a series of case studies. Part 2 will provide engineers with knowledge of the techniques of computational modelling for real time control of urban drainage systems through hands-on experience of using the software to evaluate a series of case studies.
Contact : RTB-UK

SP93-10.15 Pumps and Pumping Systems.

London - United Kingdom
March, 1994
This 3-day course is designed for practising engineers from the water industry in E.C. countries. The hydraulic aspects necessary for the specification and design of pumping systems and hydraulic transients in piping systems will be covered by two members of the academic from City University. The applied aspects of the course involving the design of pumping stations, pump sumps and electrical services will be covered by specialists from industry. The course will be supported by specific examples and case studies illustrated with the help of computer software packages.
Contact : RTB-UK

SP93-10.16 Flood Mitigation.

Bristol - United Kingdom
11 - 15 April, 1994
This course is intended to provide a review of the subject together with information on the latest developments. It will cover storm hydrology, flood warning techniques and the engineering, environmental and economic aspects of flood mitigation and control schemes. This course is addressed to engineers, scientists and managers in the water industry.
Contact : RTB-UK

93-10.17 River Engineering for Environmental Sustainability.

Glasgow - UK
May, 1994
This 2-days course will cover technical and environmental aspects of river engineering. Speakers will be drawn from a wide range of disciplines providing a multidisciplinary aspect to the course. Topics to be covered include : computer simulation, channel design, weed control, habitat hydraulics, sediment transport, plus others. The European aspect will be strengthened further by the inclusion of a speaker from University College Cork, Eire and a speaker from the University of Aalborg. The target audience will include river and drainage engineers from European consultants, public utilities and regulatory bodies.
Contact : RTB-UK

Other Forthcoming

TECHWARE

SHORT COURSES

in 1994-95

CTB coordinates :

- EURO-WORKSHOP : Continuing Education in Technology for Water Resources
Vienna (A), to be announced
- Improving Efficiency and Reliability in Water Distribution Systems
Valencia (E), 21-25 November 1994

RTB - UK & IRL coordinates :

- River Pollution
Bristol (UK), 27 June - 1 July 1994
- Coastal Defence Systems
Bristol (UK), 5-9 September 1994
- Water Supply Engineering
Bristol (UK), 19-23 September 1994

RTB - VL coordinates :

- Integrated Water Management
Viissingen (NL) - Antwerpen (B) - Hull (UK), to be announced
- Recht op Water
Gent (B), 19-20 October 1994
- VLARIO (Flemish Sewers) Courses
Antwerpen - Brugge - Gent - Hasselt - Leuven (B), to be announced

TECHWARE EUROPEAN TRAINING COURSES

Edition March 1994

A summary of all courses is available and can be ordered free of charge from the Bureaux. Please fill in and return :
I request the summary of all course descriptions, free of charge.

Name :

Address :

Return to one of the following addresses :

Coordinating TECHWARE Bureau

c/o CIBE-BIWM
70, rue aux laines-Wolstraat 70
B-1000 Brussels
Belgium
Fax : +32-2-5026735

RTB-UK&IRL

Regional TECHWARE Bureau UK and Ireland

c/o HR Wallingford
Wallingford
UK-OX 10 8BA Oxfordshire
Great Britain
Fax : +44-491-826703

RTB-I

Regional TECHWARE Bureau Italia

c/o AMGA,
via SS. Giacomo e Filippo 7
I- 16122 Genova
Italy
Fax : +39-10-8343284

RTB-VL

Regional TECHWARE Bureau Vlaanderen

c/o WEL vzw
Marktplein 16
B-2110 Wijnegem
Belgium
Fax : +32-3-3538991

HUMAN CAPITAL & MOBILITY

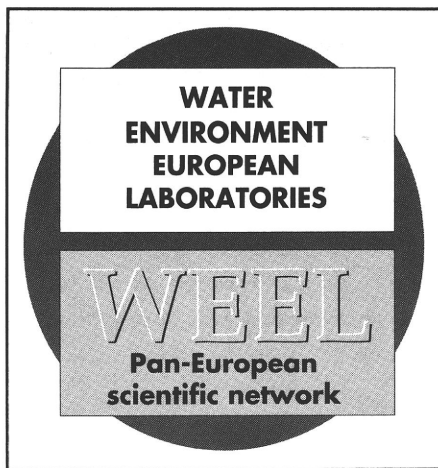


Pan-European Scientific Network :
WEEL - WATER ENVIRONMENT EUROPEAN LABORATORIES
(subnetwork of TECHWARE)

Coordinator : Ass. Prof. F. Siccardi
Università di Genova, Istituto di Idraulica
Via Montallegro 1, I - 16100 Genova, Italy
tel +39-10-3532496 • fax +39-10-3532481

**MATECH • EUROPEAN CENTER FOR MATHEMATICS AND
TECHNOLOGY OF URBAN WATER POLLUTION**

Coordinator : Ass. Prof. P. Jacobsen
Department of Environmental Engineering
Technical University of Denmark
Building 115, DK-2800 Lyngby
Tel +45-45-933908 • Fax +45-45-932850



**WEEL
Water Environment European Laboratories
Scientific Network**

**Pan-European Scientific Network for
integrating disciplinary components of
the Water Sciences and Technologies :
RTD for Regional Integrated Water
Management
Project Nr. ERBCHRXC930212**

**First Meeting of Team Leaders and
Young Researchers
Brussels 14th-16th November 1993**

The meeting was called to introduce young researchers and relative team leaders to the HCM Network system, to approve the research projects to be carried out and to finalize the contract issues between TECHWARE and the young researchers. The criteria for the selection of the researchwork to be carried out and the corresponding young researchers are based on the excellence of scientific preparation of young researchers, the previous existence of research links between the sending and receiving Institutions and the confidence that the WEEL action will contribute to make more robust such a link and to expand into a tree-like structure, networking as much as possible active research labs in the water sector at the transnational level.

The set of research themes the network is covering in its present structure, due to the financial constraints, is only a part of the whole project originally designed by TECHWARE : in fact the researches deal with the two major areas of rainfall monitoring at different scales and with different sensors and with sediment and pollution problems; other themes are only partially covered. This issue will be hopefully solved with the second funding of the network. A second proposal has been introduced to the HCM Offices on Monday 15th November 1993.

All team leaders and young researchers introduced themselves and discussed their research experiences.

The following research topics were presented:

- "Effect in uncertainty in parameter estimation for the distributed hydrological modeling of runoff and groundwater recharge processes" to be carried out at the University of Genova (I).

- "Groundwater recharge and quality assessment - Groundwater protection zoning in Portugal" to be carried out at the Laboratorio Nacional de Engenharia Civil, Lisboa (P).
- "Modeling contaminant migration in fractured/fissured aquifers" to be carried out at the University of Newcastle upon Tyne (UK).
- "Modelling sediment routing in reservoir systems" to be carried out at the University of Lancaster (UK).
- "The integrated use of multisensor hydrometeorological information and distributed hydrological modeling for real time flood forecasting" to be carried out at the University of Firenze (I).
- "Coupling of a meteorological and a hydrological model to improve the understanding of rainfall and consequent discharge in urban areas" to be carried out at the Laboratoire d'Etudes des Transferts en Hydrologie et Environnement, Grenoble (F).
- "Integrated model and processing of hydrometeorological data within an environmental information system" to be carried out at the University of Bristol (UK).
- "Modeling and prediction of sediment movement near large obstructions in alluvial streams" and "Low frequency waves" to be carried out at HR-Wallingford (UK).
- "Removal of toxic metals from wastewater using microorganisms and floatation techniques" to be carried out at the Aristotelian University of Thessaloniki (GR).
- "Development of hydrological models for operational simulation and forecasting" to be carried out at the Free University of Brussels (B).
- "Modeling pollutants fate in aquifers" to be carried out at the Laboratoire d'Hydraulique de France (F).

Eight out of eleven WEEL-researchers started in January 1994 for a one-year assignment. More about it at HYDROTOP 94, Marseille, 14 April 1994!

If you want to hear more

about the

WEEL-networking

philosophy, come to

HYDROTOP 94 in

Marseille (F) on Thursday

14 April 1994

(see leaflet enclosed)

From 1 January 1994 the European Center for MAThematics and TEChnology of urban water pollution (MATECH) will receive financial support from the EU-programme "Human Capital and Mobility". The network contract has just been signed for a 3 year period with a financial support of 750.000 ECU. In addition two institutional fellowship contracts have been signed, the first at 120.000 ECU already started in January 1993 and the second contract at 200.000 ECU starting by January 1994.

The basic idea of MATECH

Over the last 20 years there has been a steady development of our understanding of the water pollution problems generated from wastewater and rain runoff from urban areas. As a consequence today we are able to describe deterministically most of the processes involved in the generation of the pollutants, the runoff, the treatment and the effects in the receiving waters. However, the deterministic modelling approaches have been developed to a stage, where the limit is being reached with respect to the benefit achieved by more deterministic models. Deterministic Modelling is based on the concept that every process can be described by a set of fundamental physical, chemical, biological equations.

An alternative is stochastic modelling. Presently, that tends to be a black box interpretation of the system, void of physical, chemical and biological description. The future is to combine the two opposing concepts : to reach as far as possible and profitable with deterministic description and combine with stochastic description from that point on.

The basic idea is to make a deliberate effort to bring together different disciplines, like the sanitary and environmental engineer and scientist with skills in mathematics, numerical analysis, statistics, stochastic modelling. Such multidisciplinary groupings locally in an international network will have the potential to join in addressing identified issues within water pollution.

In view of the phenomenal investments in the field of urban water pollution abatement anticipated due to recent directives from the EU a concerted effort in this regard is urgently needed and economically justified.

The Work Programme of MATECH within

Human Capital and Mobility.

The overall title for the research projects is :

Integrated urban runoff, waste water treatment and receiving waters

Under this title several subprojects have been accepted :

- Stochastic properties in description of runoff (1 year fellowship to be started 1 February 1994)
- Source Control for Stormwater Management (1 year fellowship already started 1 May 1993)
- Optimisation of runoff treatment and receiving waters (network project for 3 years)
- Neural Networks in Urban Hydrology (network project for 3 years)
- Stochastic properties in description of pollutant runoff (network project for 3 years)
- Control of nutrient removal processes in wastewater (network project for 3 years)
- Pollution based operation strategies for urban drainage systems (1 year fellowship to be started spring 1994)
- Combination of stochastic parameters in urban pollution runoff modelling (1 year fellowship to be started spring 1994)

New subprojects proposed :

- Development of a regional urban water resources simulator (network project proposal)
- Identification, process description and modelling of pollutants in sewer systems (network project proposals)
- Vegetation technologies for urban pollution control (network project proposal)

- Stochastic properties in description of rain (network project proposal)
- Documentation and modelling of stormwater infiltration (fellowship proposal)
- Fuzzy control for urban drainage systems (fellowship proposal)
- Characterization of biodegradability of organic matter in combined sewer overflows (fellowship proposal)
- Stochastic properties in description of discharge from treatment plants (fellowship proposal)
- Modelling of urban snow dynamics (fellowship proposal)
- Recovery of polluted sediments after combined sewer overflows (fellowship proposal)
- Performance indicators for urban drainage systems (fellowship proposal)

Connection to TECHWARE and Panta Rhei

Several of the partners in MATECH are also members of TECHWARE and it is obvious that the two networks WEEL and MATECH will benefit from each other in a close collaboration. The editor has been so kind to invite MATECH to use Panta Rhei as information disseminator. We are happy to have this opportunity to reach a big group of potentially interested colleagues and we will try to inform on projects going on or planned and we will announce vacancy positions for the coming projects.

Per Jacobsen

For further information please contact the MATECH coordinator.

WHO ARE THE PARTNERS ?

Organisation	Country code	Contact Person
• Department of Environmental Engineering, Technical University of Denmark	DK	Per Jacobsen
• I.Kruger AS	DK	Erik Bundgaard
• Environmental Eng. Laboratory Aalborg University	DK	T.Hviid-Jacobsen
• Ecological Modelling Center	DK	A. Malmgren-Hansen
• Institute of Mathematical Statistics and Operations Research, Technical University of Denmark	DK	Henrik Splid
• Faculty of Civil Engineering, Delft University of Technology	NL	Fons Nelen
• Department of Water Quality Management and Aquatic Ecology, Wageningen Agricultural University	NL	B. Lijklema
• Institute for Water Resources University of Hannover	D	F.Sieker
• Medio Ambiente Industrial CEIT, San Sebastian	E	J.L. Garcia-Heras
• School of Applied Science Centre for Urban Research, Middlesex Polytechnic	UK	B. Ellis
• Foundation for Water Research	UK	J. Tyson
• Departamento de Hidráulica, Laboratório Nacional de Engenharia Civil Water Resources Division	P	M.Rafaela Matos
• National Technical University of Athens	GR	A.Andreadakis
• Istituto di Ricerca Sulle Acque (IRSA)	I	A.C. Di Pinto
• Department of Sanitary Engineering, Chalmers University of Technology	S	Gilbert Svensso
• EAWAG, Swiss Federal Institute for Water Resources and Water Pollution Control	CH	Willi Gujer
• Dept. of Hydraulic and Environmental Engineering The Norwegian Institute of Technology	N	Wolfgang Schilling
• Faculty of Hydrotechnics, Gdansk Technical University	PL	P.Kowalik
• Structural Faculty Technical University of Brno	CZ	Milos Stary

"Science and Technology has a vital role to play in complementing the activities involved in tomorrow's progress. The most important aspect of Science and Technology is the human factor. Europe's Human Capital is one of its most precious resources and that is why the Commission launched a major Research and Technological Development programme devoted to Human Capital and Mobility, promoting the training of young researchers. By concentrating on the young researchers who constitute its emerging scientific capital Europe is investing wisely in its future"

Antonio Ruberti
Vice President of the Commission of the European Communities

From: Preface to the 5th European Contest for Young Scientists 1993 Berlin 27-29 September 1993

The next European Contest for Young Scientists will take place in the Grand Duchy of Luxembourg, 26-28 September 1994.

For further information please contact:

Graham Blythe
CEC-DGXII-G-3 "Young Scientists Contest"
Wetstraat 2000
B-1049 Brussel
Tel : +32-2-2955822
Fax : +32-2-2953270

**EUROPEAN GEOPHYSICAL SOCIETY
XIX GENERAL ASSEMBLY**

Grenoble 25-29 April 1994

Co-editor of PANTA RHEI, Enda O'CONNELL, EGS Vice President, announces the EGS Hydrological Sciences Programme of this General Assembly in Grenoble, the home town of the newly elected President of EGS, George VACHAUD, the first hydrologist to become EGS President.

The Honorary EGS Membership has been awarded to Jim DOOGE and he is the first hydrologist to secure the Award which is the Society's highest scientific honour. Jim DOOGE will present a special Section Lecture to inaugurate the Hydrological Sciences Programme at Grenoble.

PANTA RHEI joins in congratulating G. VACHAUD and J. DOOGE, and would like to recognize that the high profile of hydrology in EGS would not have been achieved without the efforts of Professor Enda O'CONNELL.

His term as EGS Vice-President, Hydrological Sciences, was, no doubt, very demanding. It takes dedication and continuous attention. Thanks Enda !

Further information :

Professor P.E. O'Connell
University of Newcastle upon Tyne,
Dept. of Civil Engineering
Claremont Road, Newcastle upon Tyne, NE1 7RU, UK.

Phone : +44-913226405

Fax : +44-91-2226669

**EGS' General Assembly is the perfect meeting place
for WEEL and MATECH fellows !**

EurAqua

**European Network of Fresh Water
Research Organisations**

A NEW NETWORK

AIMS

1. To promote the transfer of knowledge from the science base into policy decisions at National and Community level in matters relating to freshwaters to support sustainable development and achieve a better quality of life.
2. To encourage and facilitate collaboration between researchers and scientists to identify and analyse opportunities for research and Development and explain and promote these to advance the management and environmental protection of our freshwater resources.
3. To make relevant expert advice readily available for use within the Community to support international cooperation activities and enhance the competitiveness of associated industries and service organisations.

ACTIVITIES

1. Holding of network meetings twice a year, attended by one or maximum two "linking organizations" from each Country who provide a channel of communication with other interested parties. Broad decisions on network activities and events would be made during these meetings in which a consensus would be sought.
2. Organization of technical reviews each year in specialist subjects where invited scientists and engineers from all EC Countries could discuss the priorities for research and arrange collaboration. Publication and wide circulation of proceedings especially within EC institutions.
3. Preparation of a network newsletter twice a year to provide a channel for communication between the various publicly funded research organizations carrying out research in the field of continental freshwater and with other institutional partners with which the network would have established regular contacts. This newsletter would include news from the network life (decisions made during meetings, information about technical reviews) along with subjects of common interests such as news on coming EC opportunities.
4. Other activities such as joint publications.

Contact :

Secretariat : Loïc Beroud
CEMAGREF : French Institute of
Agricultural and Environmental
Engineering Research
B.P. 22
F-92162 Antony

Tel : +33-1-40966147

Fax : +33-1-40966142

WATER CALENDAR

This calendar is a contribution of the water-related non governmental organizations joining forces under the Committee on Water Research (COWAR), which was created by the International Council of Scientific Unions (ICSU) and the Union of International Technical Associations (UITA) in 1964.

The role of COWAR is to promote necessary contacts between the professional international non governmental water-oriented organizations, and to stimulate interrelationships and integrative approaches where society asks for

combined involvement of various specializations.

A data base has been set up using the UNESCO Computerized Documentation Systems/integrated Set of Information Services (CDS/ISIS). CDS/ISIS is able to build and manage structured non-numerical data bases whose major constituent is text. The CDS/ISIS package is distributed free of charge by UNESCO.

For the time being, the calendar will be distributed in the form of a printed document, but it is planned that it will be accessible at a later stage through networks on-line.

The Water Calendar contains meetings of COWAR encompassing the following organizations :

- International Association of HydrogeologistsIAH
- International Association for Hydraulic ResearchIAHR
- International Association of Hydrological SciencesIAHS

- International Association on Water QualityIAWQ

- International Commission on Irrigation and DrainageICID
- International Commission on Large DamsICOLD
- International Union of Pure and Applied ChemistryIUPAC
- International Water Supply AssociationIWSA
- Permanent International Association of Navigation CongressPIANC
- International Association of Theoretical and Applied LimnologySIL

The Water Calendar is a contribution of the above associations to the International Hydrological Programme (IHP). The Calendar is edited and produced by the IHP Secretariat. Individual copies can be obtained free of charge either from the :

IHP Secretariat
 UNESCO
 7, Place de Fontenoy
 F-75700 Paris

Fax : +33-1-45675869
 Tel : +33-1-45684002
 Telex : 204461 Paris
 Cable : UNESCO Paris
 E-Mail : SCSZO@FRUNES21

CALENDAR 1994

RN

See reference number for corresponding addresses - page 25

- 1** FRÜHJAHR 1994
Wien (A)
Hochschulkurs. Finite elemente - berechnungen: Problemaufbereitung und modelbildung.
- 29** 29-31 MARCH
Wallingford (UK)
Course on WALLRUS.
- 40** MARCH
London (UK)
TECHWARE ETCourse.
Pumps and Pumping Systems.
- 2** 01-03 MARCH
Sunderland (UK)
Course : Environmental Monitoring - Land, Air and Water.
- 3** 10-11 MARCH
Vienna (A)
COMETT Event. Conference. Life long learning, the European success strategy.
- 29** 22-23 MARCH
Wallingford (UK)
Short Course. Overflow Impact Assessment.
- 17** 22-25 MARCH
Valencia (E)
Proyecto de Formación en Recursos Hídricos y Medio Ambiente. Fuentes de abastecimiento de agua potable : calidad y tratamiento.
- 28** 23-27 MARCH
Brussels (B)
European Student Fair.
- 40** 24-25 MARCH
Delft (NL)
TECHWARE ETCourse.
Combined Sewer Overflows. A European perspective.
- 32** 27-30 MARCH
London (UK)
11th International Conference on Technology and Education.
- 29** 29-31 MARCH
Wallingford (UK)
Course on WALLRUS.
- 31** APRIL - SEPTEMBER
Delft (NL)
Short Courses '94.
Water Resources Management in the Hydroinformatics Era, Port Management, Anaerobic Waste Water Treatment, Low-cost Water supply and Sanitation, Water Quality Management for Decision-makers, Environmental Management, Advances in Environmental Ecotechnology, Coastal Zone Management, Polder Development, Appropriate Modernization and Management of Irrigation Systems.
- 4** 5 & 15 APRIL
Pisa (I)
COMETT international post-graduate courses on Geographic Information Systems.
- 6** 10-13 APRIL
Oxford (UK)
International Conference. Management of Collaborative European Programmes and Projects in Research, Education and Training.
- 5** 11-13 APRIL
Edinburgh (UK)
Annual International Conference of the Association for Educational & Training Technology. Computer Assisted and Open Access Education.
- 30** 11-15 APRIL
Bristol (UK)
TECHWARE ETCourse.
Flood Mitigation.
- 42** 11 APR - 19 MAY
Bet-Dagan, Israel
Post-Graduate Short Course in Applied Meteorology. Hydrometeorology.
- 40** 12 APRIL
Wallingford (UK)
TECHWARE ETCourse.
Real Time Control in Urban Drainage.
- 7** 14 APRIL
Marseille (F)
Europe and Scientific and Technological Cooperation on Water.
TECHWARE - WEEL
Research/Training Synergy - HYDROTOP 94.
- 8** 18-22 APRIL
Delft (NL)
Short course. Water Resources Management in the Hydroinformatics Era.
- 33** 19-21 APRIL
Delft (NL)
Course. Modelling voor Integraal Waterbeheer.
- 40** 19-22 APRIL
Wallingford (UK)
TECHWARE ETCourse.
Coastal Engineering & Management.
- 9** 20-22 APRIL
Davis, California (USA)
Course on Water Engineering. Sediment Transport Calculations : HEC-6 Microcomputer Applications.
- 34** 25-26 APRIL
Aberdeen (UK)
Course on Environmental Impact Assessment for Civil Engineers.
- 39** 26-28 APRIL
Genova (I)
TECHWARE ETCourse.
Sewers Infrastructures in Mediterranean Countries: Filling the Gap. The Structures.
- 17** 26-29 APRIL
Valencia (E)
Proyecto de Formación en Recursos Hídricos y Medio Ambiente. Callidad, tratamiento y depuración de aguas residuales.
- 10** 28-29 APRIL
Hannover (D)
Review Conference of Technology Transfer Practice in Europe.
- 35** 28-30 APRIL
Gent (B)
COMETT Course. Cardiovasular Fluid Dynamics. Principles and Clinical Application.
- 40** MAY
Glasgow (UK)
TECHWARE ETCourse.
River Engineering for Environmental Sustainability.
- 37** 15-25 MAY
Skopelos Island (GR)
Conference. Transboundary Water Resources Management : Technical and Institutional Issues.
- 11** 16-18 MAY
La Hulpe (B)
International Conference and Exhibition. Learning Organisations. Innovations - Initiatives.
- 23** 16-22 MAY
Göd-Budapest (H)
TEMPUS JEP
International Field Training on Hydrometry.
- 33** 24-26 MAY
Delft (NL)
Course. Operationele Besturing Watersystemen.

Note : In view of PANTA RHEI's objectives, this calendar includes only educational and training or related activities in the field of water and HUMAN RESOURCES and MOBILITY. These announcements are made free of charge. Advertising of other activities such as Conferences, are welcome.

See rates on page 27
Please contact the Editor.

- 39** 25 MAY International Education. International Course. Techniques of Hydrologic Investigations for International Participants.
- Genova (I)
- TECHWARE ETCourse.** **39** 21-24 JUNE Pavia (I) **TECHWARE ETCourse.** Surface Water Pollution.
- 12** 27 MAY - 6 JUNE Ill Ciocco-Pisa (I) Course. the Role of Water and the Hydrological Cycle in Global Change.
- 33** 31 MAY - 3 JUNE Delft (NL) Course. Membraanfiltratie bij drinkwaterbereiding.
- 39** 6-8 JUNE Milano (I) **TECHWARE ETCourse.** Computer Technologies for the Analysis and Prediction of Flood Risk.
- 13** 6 JUNE - 1 JULY Ankara, Turkey Course in Sediment Transport Technology.
- 42** 6 JUNE - 8 JULY Bet-Dagan, Israel Post-Graduate Short Course in Applied Meteorology. Data Base Construction, Maintenance & Management.
- 29** 7-9 JUNE Wallingford (UK) Short Course. Introduction to Dredging.
- 14** 13-18 JUNE Gent (B) International Post-Graduate Course. Soil Pollution and Soil Protection.
- 24** 13-18 JUNE Warsaw (PL) **TEMPUS JEP** Short Course. Modelling of Sediment Yield, Transport and Deposition in Reservoirs.
- 27** 20-24 JUNE Maastricht (NL) Course. Introduction to the Administration of
- 39** 27-29 JUNE Genova (I) **TECHWARE ETCourse.** Sewers Infrastructures in Mediterranean Countries: Filling the Gap. Rehabilitation and Modelling.
- 30** 27 JUNE - 01 JULY Bristol (UK) **TECHWARE ETCourse** Short Course. River Pollution.
- 15** 27 JUNE - 29 JULY Cambridge, Massachusetts (USA) Training Workshop. Environmental Economics & Policy Analysis.
- 27** 28 JUNE - 01 JULY Maastricht (NL) Course. Decision Making in International Education.
- 16** 30 JUNE - 2 JULY Paris (F) International Conference on Education Business Partnership. Innovation through Partnership. The International Challenge.
- 29** 5-8 JULY Wallingford (UK) Course on Wallingford Procedure.
- 25** 11-17 JULY Cracow (PL) **TEMPUS JEP** Short Course. Optimization of Water Resources.
- 18** 11 JULY - 31 AUGUST Virginia&Colorado (USA) International Course. Techniques of Hydrologic Investigations for International Participants.
- 34** 17 JULY - 7 SEP Aberdeen (UK) Intensive Training Course on Environmental Assessment and Management.
- 19** 18 JULY Roorkee, India International Post-Graduate Diploma and Master's Course in Hydrology.
- 31** 18-28 JULY Coimbra (P) **TEMPUS JEP** Short Intensive Course. Hydroelectric Power Plants.
- 20** 15 AUG - 25 NOV Wageningen (NL) International Post-Graduate Course on Land Drainage.
- 21** 29 AUG - 02 SEPT Prague (PL) International Workshop. Post-graduate Hydrology Education.
- 30** 5-9 SEPTEMBER Bristol (UK) **TECHWARE ETCourse.** Short Course. Coastal Defence System.
- 22** 12-16 SEPTEMBER Birmingham (UK) Remote Sensing and GIS in Urban Waters (UDT '94). Education and Training Tools.
- 35** 15-17 SEPTEMBER Marseille (F) COMETT Course. Cardiovascular Fluid Dynamics. Principles and Clinical Application.
- 1** 19 SEPTEMBER Wien (A) Hochschulehrgang (4 Semester). Geoinformationswesen.
- 24** 19-23 SEPTEMBER Delft (NL) International Conference on Hydroinformatics.
- 30** 19-23 SEPTEMBER Bristol (UK) **TECHWARE ETCourse.** Short Course. Water Supply Engineering.
- 25** 20 SEP - 14 OCT Delft (NL) Senior Advanced Short Course in Coastal Zone Management.
- 29** 21-22 SEPTEMBER Wallingford (UK) Course on Rehabilitation of Urban Drainage Systems.
- 36** 27-30 SEPTEMBER Hannover (D) COMETT Event. International Trade Fair for Professional Qualification.
- 31** OCTOBER '94 Delft (NL) MSc Programmes/Diploma Courses. Hydraulic Engineering, Hydrology, Sanitary Engineering, Environmental Science & Technology, Water Quality Management, Environmental Sanitation and Management.
- 41** 19-20 OCTOBER Gent (B) **TECHWARE ETCourse.** Short course. Recht op Water.
- 39** 24-26 OCTOBER Genova (I) **TECHWARE ETCourse.** Sewers Infrastructures in Mediterranean Countries: The Quality of the Service.
- 42** 1 NOV - 15 DEC Bet-Dagan, Israel Post-Graduate Short Course in Applied Meteorology. Basic Agricultural Meteorology.
- 33** 8-10 NOVEMBER 17-18 NOVEMBER Delft (NL) Course. Reiniging van vervuilde grond en waterbodems.
- 25** 8 NOV - 2 DEC Delft (NL) Short Course. Appropriate Modernization and Management of Irrigation Systems.
- 26** 9-11 NOVEMBER Vienna (A) Forum for Continuing Engineering Education. Perspectives of Continuing Professional Development.
- 33** 15-16 NOVEMBER Delft (NL) Course. Natuurvriendelijke Oevers.
- 39** 21-24 NOVEMBER Cosenza (I) **TECHWARE ETCourse.** Groundwater Pollution Modelling.
- 7** 21-25 NOVEMBER Valencia (E) **TECHWARE ETCourse.** Short Course. Improving Efficiency and Reliability in Water Distribution Systems.
- 27** 24-26 NOVEMBER London (UK) Conference. Quality in International Education.
- 43** 26-27 NOVEMBER Brussels (B) COMETT Event. International Conference. Television : An educational instrument for the young European citizens.
- 39** 13-17 DECEMBER Pavia (I) **TECHWARE ETCourse.** Network Simulation.

ADDRESSES

SEE REFERENCE NUMBER
FOR CORRESPONDING ACTIVITY

- 1** Auszeninstitut der Technischen Universität Wien
E. Altermann
Guszhausstrasse 28
A-1040 Wien
Tel : +222-58801-4019
Fax : +222-5054961
- 2** The Finnish Association of Graduate Engineers Tek.
Ratavartijankatu 2
SF-00520 Helsinki
Tel : +358-1590454
Fax : +358-1590306
- 3** UETP Danube
Gusshausstrasse 28
A-1040 Vienna
Fax : +43-1-5054961
- 4** Department of Geoinformation
Technical University Vienna
Ms. Rebecca Winn
Gusshausstrasse 27-29/127/1
A-1040 Vienna
Tel : +43-1-588013992 or 3787
Fax : +43-1-5043535
- 5** Guiti Saberi
CASD, Napier University
219 Colinton Road
Edinburgh EH 14DJ
Scotland UK
Tel : +44-31-4554306
Fax : +44-31-4338161
- 6** Peter Combey
CPD Centre, Department for Continuing Education,
university of oxford
1, Wellington square
Oxford OX1 2JA, UK
Tel : +44-865-270392
Fax : +44-865-270284
- 7** TECHWARE CTB c/o
CIBE/BIWMM
70, rue aux laines
B-1000 Brussels
Tel : +32-2-5188893
Fax : +32-2-5026735
- 8** IHE Delft
P.O. Box 3015
NL-2601 DA Delft
Tel : +31-15-151814
Fax : +31-15-122921
- 9** University Extension
University of California
Davis, CA 9561-8727
224P
USA
- 10** TII - European Association for the Transfer of Technology, Innovation and industrial Information
3 rue des Capucins
L-1313 Luxembourg
Fax : +352-462185
- 11** E.C.L.O.
Chaussée de Bruxelles 135
B-1310 La Hulpe
Tel : +32-2-6555803
Fax : +32-2-6555812
- 12** Dr. H. R. Oliver (NATO ASI)
Institute of hydrology
Wallingford, Oxfordshire OX10 8BB, UK
Tel : +44-491-838800
Fax : +44-491-832256
- 13** Dr. E. Demiroz
DSI Teknik Arastırma ve Kalite Kontrol Dairesi
Baskangili
06100 Ankara, Turkey
- 14** International Training Centre (PHLO)
Wageningen Agricultural University
P.O. Box 8130
NL-6700 EW Wageningen
Tel : +31-8370-84092/3
Fax : +31-88370-84763
- 15** Training Workshop on Environmental Economics and Policy Analysis
Harvard Institute for international Development
1 Eliot Street
Cambridge, MA, 02138 USA
- 16** The Conference Secretary
International Partnership Conference 1994
The Centre for Education & Industry,
University of Warwick,
UK-Coventry CV4 7AL
Fax : ++44-203-523617
- 17** U.D. Mecánica de Fluidos
Departamento Ingeniería Hidráulica y Medio ambiente
Universidad Politécnica de Valencia
Camino de Verso s/n
Apartado de Correos 22012
E-46080 Valencia
Tel : +96-3877611
Fax : +96-3877619
- 18** U.S. Geological Survey
Water Resources Division
436 National Center
Reston, Virginia 22092, USA
Tel : +703-6485053
Fax : +703-6485070
- 19** The Professor on Head
Department of Hydrology
University of Roorkee
Roorkee-247667 India
Tel : +1332-72130/72349
Fax : +91-1332-73560
- 20** ILRI
P.O. Box 45
NL-6700 AA Wageningen
Tel : +31-8370-90144
Fax : +31-8370-17187
- 21** University of Agriculture
Dpt. of Water Resources
Prof. P. Kovar
165 21 Prague 6, Suchdol, CSFR
- 22** The British Council
Courses Department
10, Spring Gardens
UK-London SW1A2BN
Tel : +44-71-3894406/4264
- 23** Mrs. M. Neckebroek-De Kerpel
Hydraulics Laboratory
Sint-Pietersnieuwstraat 41
B-9000 Gent
Tel : +32-9-2643281
Fax : +32-9-2643595
- 24** Dr. K. Basanik & Dr. S. Ignar
Chair of Hydraulic Structures
Warsaw Agricultural University
Nouwoursynowska 166
PL-02-766, Poland
Tel : +48-22-439061/1766
Fax : +48-22-439250
- 25** Prof. E. Nachlik & Dr. T. Maczuga
Technical University of Cracow
Warszawska 24
PL-31-155 Cracow, Poland
Tel/Fax : +48-12-331083
- 26** Dr. F. Reichl
Vienna University of Technology
University Extension Centre
Gusshausstr. 28
A-1040 Vienna
Tel : +43-1-58801/4029
Fax : +43-1-5054961
- 27** EAIE Secretariat
Van Diemenstraat 344
NL-1013 CR Amsterdam
Tel : +31-20-62527727
Fax : +31-20-6209406
- 28** In-Medias div. of Reed
Exhibitions Belgium s.a.
Tel : +32-2-5141011
- 29** HR Wallingford Ltd.
Howbery Park
Wallingford
Oxfordshire OX10 8BA
United Kingdom
Tel : +44-491-835381
Fax : +44-491-832233
- 30** Dr. John Loveless
University of Bristol
Department of Civil Engineering
The University of Bristol
Queen's Building
University Walk
UK-Bristol BS8 1TR
Tel : +44-272-303280
Fax : +44-272-251154
- 31** Prof. J.P. de Lima
Dpt. of Civil Engineering
University of Coimbra
P-3049 Coimbra Cedex
Tel : +351-39-20042
Fax : +351-39-22833
- 32** University of Texas Austin
Cheri Chase
P.O. Box AA
Austin, TX 78713 USA
Fax : +1-512-471-8786
- 33** Secretariaat
Stichting Postacademisch
Onderwijs Gezondheidstechniek
en Milieutechnologie
Postbus 5048
NL-2600 GA Delft
Tel : +32-15-784618
- 34** Centre for Environmental
Management and Planning
AURIS Environment Division
23 St Machar Drive - Old
Aberdeen
UK-AB2 1RY Scotland
Fax : +44-224-487658
- 35** Mrs. K. Thienpont
Hydraulics Laboratory
Sint-Pietersnieuwstraat 41
B-9000 Gent
- 36** Deutsche Messe AG
Tel : +49-511-8932103
- 37** Prof. J. Ganoulis
Dept. of Civil Engineering
Aristotle University of Thessaloniki,
Greece
Tel : +30-31-995681
Fax : +30-31-200392
- 38** Northern Arizona University
Office of International Studies
P.O. Box 5598
Flagstaff, AZ 86011-5598, USA
Tel : +1-602-5232409
Fax : +1-602-5239489
- 39** Regional TECHWARE Bureau Italia
c/o AMGA
Via SS. Giacomo e Filippo 7
I-16122 Genova
Tel : +39-10-83431
Fax : +39-10-8343284
- 40** Regional TECHWARE Bureau U.K.
& Ireland
c/o HR Wallingford Ltd.
Howbery Park, Wallingford
UK-OX10 8BA Oxfordshire
Tel : +44-491-835381
Fax : +44-491-826703
- 41** Regional TECHWARE Bureau
Vlaanderen
c/o WEL
Marktplein 16
B-2110 Wijnegem
Tel : +32-3-3537253
Fax : +32-3-3538991
- 42** International Post Graduate
Courses
P.O. Box 25
Bet Dagan 50250 Israel
Tel : +3-9682121
Fax : +3-9682126/176
- 43** Cabinet Douxchamps & Associés
Tel : +32-2-3759082

The Most Important European Events For Higher Education

800 universities from 30 countries will be present. You can be there too, as one of the 200.000 visitors!



European Student Fair
BRUSSELS
March, 23-27, 1994
Exposition Center - Halls 11 and 12



Andaluçia 94
SALON INTERNACIONAL DEL ESTUDIANTE
CORDOBA
April, 12-16, 1994
Institucion Ferial de San Carlos

A unique opportunity

For students to obtain information on :

- university education and postgraduate courses in Europe, and in the rest of the world
- the mobility programmes in education of the European Community (Erasmus, Comett, Lingua, Tempus,...)

For professionals in education :

At the Euro-Meeting on Higher Education, in Brussels to:

- Discuss collaboration on a European and an international level with academic colleagues from other institutions.
- Get information on the new initiative of the Commission of the European Community concerning the second generation of educational mobility programmes.
- Participate in a colloquium on the new role of the university in our society (organised by FUCE).

Conference programme of Cordoba:

- Research and Development: The role of the universities.
- The Latin-American universities.
- Universities and society: insertion and conflict.
- Universities and culture: nationalism and universality.

Frankfurter Allgemeine
ZEITUNG FÜR DEUTSCHLAND

THE EUROPEAN
THE WEEKLY NEWS PAPER FOR EUROPE



For more information: European Student Fair • Rue de la Caserne 86 • B - 1000 Brussels Belgium • Tel. : 32/2/514 40 80 - Fax : 32/2/514 48 18

EURO CHALLENGE

The first European study and career planning book

Key Information and Jobs
for the European Graduate 93/94

Joerg E. Staufenbiel
Institut für Berufs- und Ausbildungsplanung Köln GmbH
P.O. Box 10354, D-550475 Köln

TASK FORCE HUMAN RESOURCES
EDUCATION TRAINING YOUTH COMPENDIUM
1992 - 1994 Projects

FORCE
FORMATION CONTINUE EN EUROPE

Luxembourg : Office for official Publications of the
European Communities, 1993
ISBN 92-826-6002-8

FLEXIBLE AND DISTANCE LEARNING

Lieve Van den Brande

DELTA Directorate C - DGXIII, Information Technologies and
Industries and Telecommunications, Commission of the
European Communities - Brussels, Belgium

Publication no EUR 13977 EN
Published in 1993 by John Wiley & Sons Ltd,
Baffins Lane, Chichester,
West Sussex PO19 1UD, England
ISBN 0 471 93015 6

CONTENTS

1. What are distance and flexible learning technologies ?
 2. Europe-wide flexible and distance learning
 3. Technology-based training in european countries :
Market and policy trends
 4. Being educated at a distance
 5. Being educated through information technologies in
Europe
 6. Flexible and distance learning initiatives outside Europe
 7. Conclusions by Roland Hüber
- Glossary of Terms • Bibliography • Index

ENVIRONMENTAL EDUCATION AWARD

Candidates for the award

The EERO Environmental Education Award will be
awarded to an institution, organisation, private individual
or company that during the last 3 years had made a
substantial contribution by spreading knowledge of the
environmental sciences in ways that protect human health,
safeguard natural resources and/or enhance the quality of
the environment.

Selection : You are invited to submit nominations before 31
March 1994. The selecting procedure will then start.

Applications and nominations should be submitted no later
than 31 March 1994 to :
N.G.Ch. Wevers, EERO Training Centre,
P.O. Box 182, 6700 AD Wageningen,
The Netherlands
Tel : +31-8370-84924
Fax : +31-8370-84941

INFO

The European Centre for Medium-Range Weather Forecasts (ECMWF) at Reading, UK offers two fellowships of 1000£ per month.

Reference : AP94-02
Duration : 1 year, starting 1 May 1994
Requirements : post-graduate with experience
in meteorology and research
Deadline for application : 31 March 1994

Applicants should use the forms available from
ECMWF, Shinfield Park, Reading, Berkshire,
R62 9AX England
Phone : +44-734-499000
Fax : +44-734-869450

VACANCY

POSITION WANTED

Doctor in Agricultural
Sciences, specialized in
biotechnological water
treatment, seeks a position.
Eight years experience in
applied research. Three
years experience in research
development in Indonesia.

Contact : Dr. J. Vandenabeele
Edelareberg 53
B-9700 Oudenaarde
Tel +32-55-231.33.09

RESEARCH FELLOWSHIPS

Postgraduate research fellowships
for 9 to 12 months duration in
Norway are available for 1994-95.

Applications should be sent before
15 March 1994 to :

Research Council of Norway,
Secretariat for Cultural Exchange
Programmes,
P.O. Box 2700 St. Hanshaugen,
N-0131 Oslo
Tel : +47-22-03-70-00

To advertise your vacancies
contact the Editor
Fax : +32-2-6413022
NEXT COPY DEADLINE :
1 May 1994

ON YOUR DESK

ADVERTISING RATES

(in ECU)

Advertisements must be informative and related to the objectives of PANTA RHEI or the activities of partners. They are subject to cancellation at the discretion of the Editor.

Free of charge

- Student opportunities
- Courses, workshops, meetings (in calendar format)

At cost per line in a column

classified	in ECU
• positions wanted	3
• positions available	4
• courses, workshops, meetings, conferences	5
• services, supply	6

At cost per page or part of it : display advertising

• full page	600
• half page	300
• quarto page	150
• octavo page	75

Special placements or enclosures : give details and ask for rates.

COPY DATE FOR THE NEXT ISSUE IS 1 MAY 1994
PANTA RHEI is published on DIN A4 format

- TECHWARE members are entitled to receive a 50% discount or two insertions for the price of one.
- Invoices are expressed in ECU and must be paid with all banking costs charged to the payer.

Please note

You may receive more than one copy of this information bulletin due to

- your membership in one of the partner-organizations
- your partnership in water related projects.

Please pass extra bulletins on to your colleagues who may be interested in PANTA RHEI.

- Please add my name to your mailing list
- Change address as shown
- Please publish the enclosed training informations (calendar format, free of charge) in the next issue
- Please publish the enclosed information as classified or as display advertising and send me the invoice
- Please send me an Advertising Agreement

Name :

Affiliation :

Address :

.....

.....

Tel : Fax :

Telex : E-mail :

PANTA RHEI

A quarterly information bulletin edited on behalf of the partners in the field of hydrology, water management and water resources technology. It is published with the financial support of the European Community within the framework of its HUMAN RESOURCES and MOBILITY programmes and distributed free of charge.

The present distribution is 2,000 copies.

Issues are published in September, December, March and June.

OBJECTIVES OF PANTA RHEI

An efficient and continuous way of communication among all ERASMUS, COMETT, TEMPUS, HCM and COST-CEEC partners, both active and prospective, and among students and training participants with interest in water related fields.

Service to the

- ICP-Interuniversity Cooperation Programme "Hydrology and Water Management"
- JEP-Joint European Project : "Interuniversity Coordinating Forum for East-West Cooperation in the field of Environment, Water and Agricultural Soils (EWA-Ring)"
- UETP-University Enterprise Training Partnership: TECHWARE - TECHnology for WATER REsources
- TECHWARE-WEEL-BEST pan European scientific network "Water Environment European Laboratories"
- MATECH : European Center for Mathematics and TECHnology of urban water pollution

Dissemination of activities or proposals of partners, in particular,

- transnational exchanges of students, young graduates and staff
- joint development of full curricula or specific training tools
- crash or intensive courses
- analysis of training needs

Information about other water related training activities, including research training.

Promotion of a European dimension in the field of water-related education and training.

"panta rhei"

all things are in constant flux

It is an axiom of Heraclitus (c.540-c.480 BC), Greek philosopher of Ephesus, quoted by Plato. Heraclitus is also known for illustrating the persistence of unity through change by the analogy of the river : "Upon those who step into the same river different and ever different waters flow down".

EDITOR

A. Van der Beken

IUPHY - Interuniversity Postgraduate Programme in Hydrology.
Vrije Universiteit Brussel
Pleinlaan 2, B-1050 Brussels, Belgium
Tel +32/2/6413021
Fax +32/2/6413022
E-mail : hydr @ vub.ac.be.

Editorial assistant : A. Wart

CO-EDITORS

J.J.Bogardi, Wageningen, The Netherlands

E. Cabrera, Valencia, Spain

P. Hubert, Paris, France

I. Ijjas, Budapest, Hungary

P. Jacobsen, Lyngby, Denmark

J. Kindler, Warszawa, Poland

J.P. Lobo Ferreira, Lisboa, Portugal

P.E. O'Connell, Newcastle upon Tyne, U.K.

F. Siccardi, Genova, Italy

ISSN 0777-6470



ERASMUS



COMETT



Tempus



HCM

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the HUMAN RESOURCES and MOBILITY Programmes of the European Community (EC)

Bulletin d'information pour 'l'Enseignement de l'hydrologie et de la gestion de l'eau' et la 'Formation aux technologies des ressources en eau' dans le cadre des programmes Ressources Humaines et Mobilité de la Communauté Européenne.

Informationsblad om 'Uddannelse og efteruddannelse i tekniske emner knyttet til vand' indenfor EF's rammeprogrammer om Menneskelige Ressourcer og Mobilitet.

Boletín de información sobre 'Educación en hidrología y gestión de agua' y 'Formación práctica en tecnologías de recursos de agua' en el marco de los programas de la Comunidad Europea de Recursos Humanos y Movilidad.

Informatie bulletin voor 'Onderwijs en waterbeheer' en 'Opleiding voor technologie van de watervoorraden' in het raam van de programma's Menselijk Potentieel en Mobiliteit van de Europese Gemeenschap.

Bolletino informativo riguardante: 'Studio dell'Idrologia e Gestione delle Risorse Idriche' e 'Corsi di formazione sulle tecnologie delle Risorse Idriche', nell'ambito dei Programmi della Comunità Europea sulle Risorse Umane e la Mobilità

Informationsbulletin für 'Unterricht in der Hydrologie und Wasserverwaltung' und 'Ausbildung für die Technologie des Wasservorrates' im Rahmen der Programme Menschliches Potential und Mobilität der Europäischen Gemeinschaft.

Információs közlemény az Európai Közösség Emberi Potencial és Mobilitás programjainak keretében 'hidrológia és vizgazdalkodás oktatáshoz', továbbá 'vízkészlet technológia kiképzéshez'.