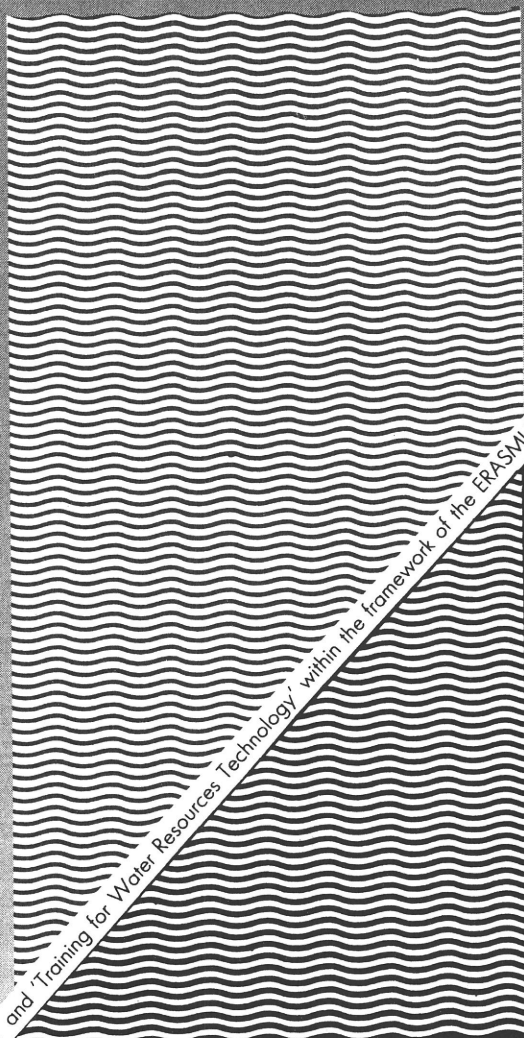


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PANTA RHEI



Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the ERASMUS, COMETT and TEMPUS Programmes of the European Community (EC)

A QUARTERLY BULLETIN

N° 10 - DECEMBER - 1991

GLOSSARY

ACMOBI

ACademic MOBility information system.

CEC

Commission of the European Community.

CEE

Central and Eastern Europe.

COMETT

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).

DG

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

EC

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

EP

European Parliament (EC).

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.

FORCE

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

ICP

Interuniversity Cooperation Programme (ERASMUS).

IP

Intensive Programme (ERASMUS).

IRDAC

Industrial Research and Development Advisory Committee of CEC.

JEP

Joint European Project (TEMPUS).

NGAA

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

PEP

Personnel Exchange Programme of TECHWARE.

RTB

Regional TECHWARE Bureau.

SAST

Strategic Analysis for Science and Technology (DG XII).

SME

Small- and medium sized enterprise.

SPES

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

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 headquarters in Brussels (B). TECHWARE- Italia is a Regional TECHWARE Bureau (RTB).

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

TEMPUS

TransEuropean Mobility Scheme for University Studies, the EC-programme for education and training in CEE-countries (eligible : BG, CS, H, PL, RU, YU) (TFHR).

TFHR

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

UETP

University Enterprise Training Partnership (COMETT, Strand A).

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.

EDITORIAL

Job-related training is a hot issue for different reasons. The technical demands of technology are not (or cannot be) met by formal education. Competition in the European Open Market as well as in world markets is likely to become more fierce than ever. Who should pay for the training: the government or the employer or the trainee?

Technological innovations may not be recognized by some as a paramount factor in the water-related sector. The same water problems of all times are still there: excess (floods) or lack of water (droughts) and the quest for safe water (quality and pollution). And many of these water problems will not be solved by (new) technologies alone. Most of them are simply generated by overpopulation.

Nevertheless, because water is so vital to the economy and the human well-being, investments in water and waste water treatment facilities in the EC will climb from 17 billion ECU in 1985 up to 22 billion ECU in 1995 (The Employment in Europe, 1990, p. 82), and is by large the most important investment in the Pollution Control Market. The projected annual growth of the environmental management market in EC is about 8% with a range of 6,4% in Germany and 13% in Portugal.

Hence, the importance to develop and try out new technologies, and if successful, to apply them in the water sector. Better management of our water resources, better monitoring of quantity and quality - the latter being indeed very poorly developed - of surface and groundwaters, improved treatment of drinking or process water and waste water, these are overall and well-known objectives. What is less known is to what extent new technologies can be successfully applied to achieve the goals. It is a typical **research and technological development (RTD)** issue and TECHWARE is proud having recently made a contribution to this issue (see SAST, p.9) on behalf of CEC-DGXII.

But RTD alone is not solving the problems! Transfer of knowledge, increase of competence, development of new skills are complementary action.

It is the human capital as much as the money capital which is the key to improvement. The human capital of the water sector is in the hands of this sector itself. Its up to the sector to analyse the training needs and to develop its training strategy, projects and products. The programmes of TFHR such as ERASMUS, COMETT, TEMPUS or FORCE offer an excellent way to pursue efficiently these goals by creating networks of a European dimension for synergy with already existing activities or projects.

PANTA RHEI welcomes Prof. J.J. Bogardi from the Wageningen Agricultural University (NL) as the new co-editor. Being himself the coordinator of a large and important TEMPUS-JEP, he recognized the role of PANTA RHEI towards the "wet" people of Central and Eastern Europe. Good-luck to EWA-Ring!

The Editor

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NEWS from ERASMUS

ICP : Interuniversity Cooperation Programme 'Hydrology and Water Management'

Coordinator : Prof. A. Van der Beken (see address Editor)

- | | |
|---|-----|
| Vrije Universiteit Brussel | B |
| Université Libre de Bruxelles | B |
| Faculté des Sciences Agronomiques de Gembloux | B |
| Rijksuniversiteit Gent | B |
| Université de L'Etat de Liège | B |
| Université Catholique de Louvain, Louvain-la-Neuve | B |
| Ruhr-Universität Bochum | D |
| Danmarks Tekniske Højskole, Lyngby | DK |
| Universidad Politécnica de Valencia | E |
| Institut National Polytechnique de Grenoble | F |
| Université des Sciences et Techniques du Languedoc (Montpellier II) | F |
| Université Pierre et Marie Curie (Paris VI) | F |
| Università degli studi di Bologna | I |
| Università degli studi di Genova | I |
| Politecnico di Milano | I |
| Università degli studi di Perugia | I |
| Università degli studi di Torino | I |
| University College, Cork | IRL |

ERASMUS Bureau
15, rue d'Arlon/Aarlenstraat 15
B-1040 Brussels
tel +32-2-2330111/fax +32-2-2330150
telex 63528

ICP "HYDROLOGY AND WATER MANAGEMENT" ICP-91-B-1138/06



Fourteen partners met in Valencia (E) on September 17, 1991. They prepared the report for 1990-91, adjusted the activities for 1991-92 and discussed proposals for 1992-93, due 31 October 1991. The partnership for 1991-92 includes the following universities :

- | | |
|-----------------------------------|----|
| Technische Universiteit Delft | NL |
| Landbouwniversiteit Wageningen | NL |
| Universidade de Coimbra | P |
| Universidade Técnica de Lisboa | P |
| University of Bristol | UK |
| University of Newcastle-Upon-Tyne | UK |

For 1992-93 (from July 1992 onwards) the above partnership is extended with :

- | | |
|---|----|
| Universität für Bodenkultur Wien | A |
| Ecole Polytechnique Federale de Lausanne | CH |
| Université de Neuchatel | CH |
| Institut National Polytechnique de Toulouse | F |
| Université de Paris-Sud | F |
| Università degli Studi di Firenze | I |
| Università degli Studi di Padova | I |
| Università degli Studi di Pavia | I |

The next plenary meeting of all ICP-partners will be held on 31 August and 1 September 1992 in Firenze (I) at the occasion of the 6th annual Italian Conference of Hydraulics and Hydraulic Constructions.

XXIII CONVEGNO DI IDRAULICA E COSTRUZIONI IDRAULICHE "L'IDRAULICA ITALIANA NEL CONFRONTO EUROPEO"

Contact :

Prof. Giorgio FEDERICI
Dipartimento di Ingegneria Civile
Università di Firenze
via di S. Marta, I-50139 Firenze

tel : +39-55-4796432/4796309/4796212
fax : +39-55-404375
telex : 580681

ERASMUS ICP "Hydrology and Water Management"

Name :
Address :
.....
.....

requests a copy of the INFORMATION BROCHURE

Date : Signature :

Return to the Editor of PANTA RHEI

JEP : Joint European Project 'Interuniversity Coordinating Forum for East-West Cooperation in the field of Environment, Water and Agricultural Soils (EWA-Ring)'

COORDINATOR OF EWA-RING :
Prof. J. Bogardi, Department of Hydrology,
Soil Physics and Hydraulics.
Nieuwe Kanaal 11
NL-6709 PA Wageningen
tel : +31-83-7082778 / 7082293
fax : +31-837084885 / telex : 45015

Prof. mr. J. WESSEL, Director of the RBA-River Basin Administration Centre, Delft University of Technology (NL), is coordinator of

JEP 0266-90/1 'Environmentally Sound River Basin Development'

Other participating universities are :
University of Karlsruhe (D) : Prof. R. Klute,
Technical University of Budapest (H) : Prof. I. Ijjas.

Background and the aim of the project

One of the major problems of Hungary and the Danubian countries is the assessment of the interactions between the environment and water management of the Danube. The socio-economic incentives underline the urgent need for enhanced water resources development. On the

other hand, ecological and cultural evaluation may question the justification of certain projects and development plans, however important they are from utilitarian points of view. The right decisions need scientific and educational support and call for an integrated and transdisciplinary approach.

Objectives

The targets of the project can be summarized as follows :

- Long term, large scale objectives : reviewing and development the water resources and hydraulic engineering curricula to introduce a European dimension to environmental and water resources engineering education.
- Short term objectives : a new course will be developed on Environmentally Sound River Basin Development.

Subtopics

The main subtopics of the project will be river basin administration, simulation of water resources systems, interactive groundwater and river system simulation, geographical information systems in water resources development, aesthetic aspects of water management, decision making methods, conflict management, public involvement, Environmental Impact Assessment methodology for water related objects, legal aspects of environmental and water management (such as environmental and water law), comparative law, establishment of appropriate methods of negotiation and decision support aiming at river basin wide policy creation to secure rational and environmentally responsive river management and development plans.

Prof. J. WESSEL organizes an International Symposium :

'Transboundary River Basin Management and sustainable Development' Delft-Rotterdam, May 18-22, 1992

The occasion is the 150th Anniversary of Delft University of Technology.

Contact :

Prof. mr. J. Wessel, Director RBA Centre
Kanaalweg 2B, 2628 EB Delft
The Netherlands
fax : +31-15787105 tel : +31-15-783565

HYDRAULICS and HYDROLOGY

IAHR (International Association of Hydraulic Research) hold its XX1st Biennial Congress in Madrid, 9-13 September.

There has been a workshop meeting on "Hydraulics Education - Europe 2000" on Tuesday 10 September. A Discussion Paper was presented by the ad hoc committee (H. Kobus, chairman; M. Bouvard, J.E. Prins, H. Salz, O. Starosolszky, C. Thirriot and A. Van der Beken, members).

Outline of the Discussion Paper :

1. The role of Education and Training in IAHR.
2. Conclusion of the SHF-Colloquium on Training for European Hydraulic Engineer of the Year 2000, Paris, November 1991.
3. Basic University training : educational requirements.
4. Continuing education in hydraulics and hydraulic engineering.
5. Relationship between hydraulics and hydrology in engineering education and training.
6. Possible IAHR actions.

Further information :

The Secretary-General of IAHR
P.O. Box 177, NL-2600 MH Delft
Fax : +31-15-619674

Scheme for cooperation and mobility in higher education between Central/Eastern Europe and the European Community

Deadlines for submission of applications :

31 January 1992 for Joint European Projects (JEPs).

31 December 1991 and **30 June 1992** for individual staff members and for Complementary Measures.

The Vademecum for Academic year 1992/93 is available from EC TEMPUS Office :

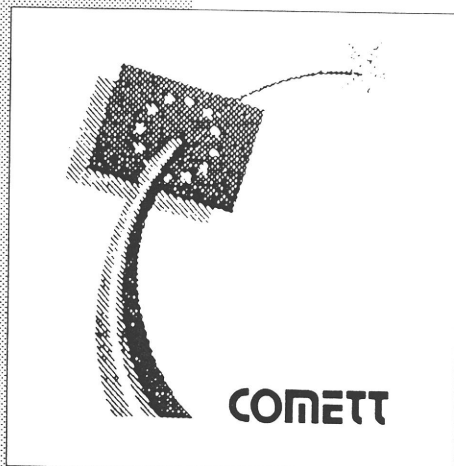
Montoyerstraat 14
B-1040 Brussels
tel +32-2-5040711/fax +32-2-5040700

Excerpts from
THE EVALUATION OF COMETT

Executive Summary with special attention to the sectoral UETP-activities and their future.

Opportunities Achieved by Sectoral UETPs

Some of the sectoral UETPs have also been successful at the regional and member state levels through improving the flow of R+D findings and technology transfer.



The sectoral UETP network is not however, closely involved in the dissemination of the findings of Community sponsored R+D. This is in part because the nature of these findings is not necessarily suitable for ready

incorporation into COMETT training activities. Specific training projects have been more successful in this regard. It is also difficult to discern close links between the development of the sectoral UETP network and Commission industry policy. This is a consequence of both the very small scale of the sectoral network relative to European training effort in advanced technological fields and the lack of specificity of such industry policy. In consequence, for only a small number of sectoral UETPs was it possible to draw the conclusion that their activities were demonstrably leading to short term competitive advantage for industry at the European level. Nevertheless, where genuine transnational co-operation has been achieved it was evident that barriers to the integration of training activity at the European level had been eroded.

Constraints on the Sectoral UETPs

The resources available have often been low relative to the objectives and expectations. This generates a tension whereby UETPs have adopted a low profile so as not to raise expectations but at the same time have run the risk of not reaching all those likely to benefit from their activities.

Factors Affecting the Performance of Sectoral UETPs

In common with regional UETPs the competence and drive of the sectoral UETP project managers has been critical. It has been rare for the UETPs to develop as expected, it has been necessary to encourage partners to be far sighted and to balance a wide variety of motivations amongst partners. The requisite skills for this are not widespread.

The Long Term Viability of Sectoral UETPs will depend upon the extent to which the UETPs are able to generate additional resources through undertaking activities con-

sistent with the objectives of their sponsors and partners. As with all UETPs the success of COMETT sectoral UETPs is highly dependent upon the calibre of the UETP project managers. In some respects the role is especially critical in the sectoral UETPs because of the greater emphasis on transnational activity and the need for the UETPs to build up a role complementary to that of other agencies and interests involved with the sectors. The combination of drive and skills required (language, technical, presentational, administrative and entrepreneurial) is rare.

Strengthening the Sectoral Role of UETPs

Pro-active identification of more sustained sectoral UETP activity more closely linked to other Community policies. Those sectoral UETPs which were more genuinely European and not closely linked to regional markets would have been appropriate candidates for such support.

The Potential for Larger Scale Sectoral UETP Activity

If resources were scarce then the evidence of this study would suggest that priority be given by the EC to the sectoral UETPs over the regional UETPs.

A T T E N D E D

COMETT EC CONFERENCE

during the Dutch presidency of the EC
'Towards new models of university-industry cooperation : the example of COMETT'

hosted by The Netherlands during the Dutch presidency of the European Community.
Amsterdam, 13-15 November 1991

This Conference has explored the major issues of technology transfer between industry and higher education institutions. The IRDAC reports "Skills shortages in Europe" and "School and Industry" (see PANTA RHEI No. 7, March 1991) were the starting points. But the final report "Evaluation of COMETT", commissioned by the CEC to the independent consultant group ECOTEC, and accompanying initial and selective response by CEC-TFHR, was equally at stake.

R E C E I V E D

COMETT 1990 Compendium, 370 pp.
Contents : The COMETT programme ; COMETT Information Centres in all EC- and EFTA-countries
Indexes :

1. projects by technology sector
2. list of regional, sectoral and mixed UETPs
3. projects by country of coordinating organisation
4. projects by participating country
5. Strand B projects by exchange flows

Description of projects : Strands A, B, C
Statistical overview

COMETT I : Final Report of the Commission (1986-1990) SEC (91) 1016 final
Brussels, 7 June 1991, 41 pp.

Both available from : COMETT Information Centres or COMETT Technical Assistance Office
14 rue Montoyerstraat 14, B-1040 Brussels
tel : +32-2-5138959/fax : +32-2-5139346

Report on the COMETT Strand Ba Conference, Segovia (E), 7-8 November 1991.

'University Education and Work Placements : Transnational Dimension'

The Conference was part of the "Positive Actions" to strengthen the COMETT Programme. Five subgroup workshops were held:

1. Administrative structures and procedures for the successful operation of student industrial placements.
2. Electronic Mail and Database Systems to be used by UETPs or Managers of Pools.
3. Culture and Academic/Working Environment for student preparation.
4. Legal obstacles to a sound development of student placement schemes within EC-member states and EFTA countries.
5. Strategy for further development, including a COMETT Placement Guide.

Each subgroup has prepared recommendations, taken to the plenary session for further consideration and action by COMETT and TFHR (Task Force for Human Resources) of the CEC. One of the main conclusions is that each country should prepare a guide for both students and enterprises regarding the legal and practical aspects of placements. France has already made its homework :

Bienvenue en France !

TECHWARE was active in subgroup 2 with its **ACMOBI** - ACademic MOBility information system, an application of the database management system CDS/ISIS, a product of UNESCO. With the help of a small grant from the COMETT Positive Action programme, the ACMOBI version 2 was presented and a demo is available for PC-DOS. Ask for your DEMO : only 10 ECU (5 ECU for TECHWARE members).

As important is TECHWARE's involvement in **OPEN**, the computer conferencing system of M. Also within the COMETT Positive Action programme, TECHWARE is part of OPEN as a pilot-user. The purpose is to explore the usefulness of OPEN for TECHWARE and its Regional Bureaus but the link with ACMOBI would be, of course, the ultimate step.

SPES Ba STUDENT PLACEMENTS

What are the benefits of placements ?

(by courtesy of UK COMETT Liaison Office)

• 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

- An overseas placement in industry 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 placement will make useful contact with European employers.
- Overseas 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.

OFFERS (25-11-91)

Code	Country	Duration	Period	Topic proposed
PT91-1	UK	6 months	not specified	Reservoir operational control rules
PT91-2	B	6 months	a.s.a.p.	Hydraulic model of sediment transport in sewers.
PT91-3	F	6 or more	not specified	Databases.
PT91-4	NL	3-12 months	not specified	Applications in water industry.
PO91-1	A	6 months		Biology/chemistry. Groundwater analysis, waste disposal sites.
PO91-2	F	3-12 months		Mathematical modelling.
PO91-3	F	6-10 months	a.s.a.p.	Fluid mechanics and pumps.
PO91-4	F	3 months	not specified	Marketing pipelines.

DEMANDS (25-11-91)

Code	Home & Host Country	Duration	Period	Topic suggested
DT91-1	B-UK/NL/GR	6 months	03/92-10/92	Feasibility of hydraulic structures, embankments irrigation and drainage canals.
DT91-3	B-DK/IRL/UK N/S	6 or 12 months	not specified	Water treatment, environmental sanitation.
DT91-4	UK-F/NL	12 m.	02/92-01/93	Design and implementation of water and environmental systems.
DT91-5	B-E/IRL/UK	6 months	not specified	Hydraulics and hydrology.

FILL IN THE FORM BELOW AND SEND IT TO THE EDITOR OF PANTA RHEI

TECHWARE/SPES

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

- Allow for a period of about 6 months between this request and the start of your training •

Name :
 Enterprise :
 OR University :
 Address :
 Tel : Fax : Telex :

is interested in Training/Offer

Offer Code No.

please send me full information about the candidate Demand Code No.

please send me the SPES Vademecum including prototype agreements

Date :

Signed :

**COMETT 1992 CALL FOR THE PERIOD
1992-1993 AND BEYOND**
ALSO FOR EFTA-COUNTRIES !

TECHWARE will apply for strands Ba, Bc, Ca and Cb and is expecting proposals from its members. Please return the form below before December 31, 1991.

**COMPUTER-AIDED-LEARNING IN HYDRAULICS,
HYDROLOGY AND WATER RESOURCES TECHNOLOGY**

It is proposed to develop a Strand Cb project for C-A-L within the framework of TECHWARE in the subject areas listed above. Active participation is sought from current and future TECHWARE members; academic input for compiling the

COMETT CALL '92

Name :

Address :

Ba Student

Period	Duration	Topic	Requirements
1
2
3

Bc Personnel Exchange (add CV and project description)

Name
Host university/enterprise

Ca Short courses (add outline of course and partner-lecturers)

Location Title Period (date)

Date Signature

Return to the Editor of PANTA RHEI

**COMETT CALL '92
CAL in Hydraulics, Hydrology
and Water Resources Technology**

Name :

Address :

1. Do you presently use or have you been trained using a computer aided learning package covering hydraulics, hydrology and water resources technology ?

YES NO

If yes, which package, which training company and which areas did it cover ?

2. Do you think there is a need to develop more computer aided learning packages for use in hydraulics, hydrology and water resources technology training ?

YES NO

If yes, for the teaching of which topics and skills would they be of greatest use ?

Thank you for your help.

Date Signature

Return to the Editor of PANTA RHEI

programmes and particularly INDUSTRIAL INPUT for statements of training needs and opportunities for material assessment. Please fill in the QUESTIONNAIRE above and return to TECHWARE before December 31, 1991.

TECHWARE Membership Dues 1992

Decision of the General Assembly of Genova, 20 April 1991

- Individual Consultant 200 ECU
- University, Research Institute(Laboratory or Department)/School/Non-commercial ... 220 ECU
- Enterprise/Undertaking/Authority (less than 200 employees) COMETT Size codes S1, S2 & S3 300 ECU
- Professional and Scientific Association, UETP'S, Federation of Enterprises 400 ECU
- Enterprise/Undertaking/Authority (more than 200 employees) COMETT Size codes S4, S5, S6 & S7) 500 ECU



**For all further information
contact the Secretary-General of
TECHWARE**

c/o CIBE/BIWM, 2nd floor
70, rue aux Laines / Wolstraat 70,
B-1000 Brussels
tel : +32-2-5188894
fax : +32-2-5188306/telex : 61927

Bank accountnumber (in ECU)
005-4323374-76-995-19
Bank address : ASLK-CGER
P.O.Box 1436, B-1000 Brussels

**A summary of all courses is now available and can be ordered free of charge from the Secretariat.
Please fill in and return :**

TECHWARE EUROPEAN TRAINING COURSES 1991 - 1992

I request the summary of all course descriptions, free of charge.

Name :

Address :

Return to the Editor of PANTA RHEI

FORTHCOMING TECHWARE ACTIVITIES

ECOTOXICOLOGY A TOOL FOR WATER QUALITY MANAGEMENT

Short training course (Strand Ca 1990)

25 - 28 February, 1992
Lelystad, The Netherlands

The course is aimed at those graduate level employees and technical managers who are involved in water quality management policy making and its application in industry, consultancy, water authorities or public sector institutions throughout Europe. In addition, the course will be of interest to those who have working responsibilities within the general field of pollution biomonitoring and environmental impact assessment.

Please contact :

Dr Mike Revitt
School of Applied Science
Middlesex Polytechnic
Bounds Green Road
London N11 2NQ, UK
Tel : +44-81 368 1299
Fax : +44-81 361 1726

EUROPEAN TRAINING COURSES

SP 1.4 GIS-WATER RESOURCES EVALUATION AND EXPLOITATION

2 - 6 March 1992
Genova, Italy

Organised by TECHWARE-Italia in cooperation with GENOVA RICERCHE CONSORTIUM..

The course presents a feasibility study for water engineering, from the analysis to the project choices. GIS capabilities in analysis and data handling are a fundamental support.

Scientific coordinators and contents :

Giorgio Roth, Istituto di idraulica/Facoltà di Ingegneria dell'Università di Genova.
Alberto Carrara, Centro Interazione Calcolatore/CNR-CIOC.

- Exploitation of water resources with low environmental impact : use of flowing water.
- Feasibility study for a structure to collect water.
- Complete geographical database for a river basin ; basic and thematic data.

- Definition of suitability criteria for evaluation of different areas.
- Synthesis report and guide for study documentation.

Please contact :

Genova Ricerche Consortium
Attention Mr. L. Olivieri
Via dell'Acciaio, 139
I-1652 Genova
Tel : +39-10-6514000
Fax : +39-10-603801

SP 4 WATER SUPPLY SYSTEMS State of the Art - Future Trends

19 - 23 October 1992
Valencia, Spain

Please contact :

Prof. E. Cabrera
Hydraulic and Environmental Engineering Department
Universidad Politecnica de Valencia
Apartado de Correos 22D12
E-46080 Valencia
Tel : +34-346-3615051 (ext. 352)
Fax : +34-346-3614800
Telex : 62080

SP6 MANAGEMENT OF IRRIGATION SYSTEMS

16-20 March 1992
Athens, Greece

Objective

The objective of the short course is to train 20 scientists and engineers professionally involved in irrigation water management. Participants expected to have a degree in engineering, agronomy or other related disciplines. Participants can be from any European countries from the public or private sectors.

Provisional Programme

1. Planning, Design and Management of Irrigation Projects : An Introduction
2. Computer Aided Design and Design for Management
3. ISAID : Integrated System Assessment of Irrigation Design.
4. Real Time Control of Pressurized Irrigation Networks
5. Operation of Large Open Channel Irrigation Networks
6. Automation and Control of Small Irrigation Projects
7. Advanced Technologies in Irrigation Water Management
8. Environmental Institutional and Social Aspects of Irrigation Water Management

Language

English
Aid for Greek translation

Coordinating Organization :

ECOWARM
Project Coordinators : Prof. G. Tsakiris and Prof. J. Feyen.

Please contact :

Mr. O. Manoliades
Laboratory of Rural Technology
National Technical University of Athens
15773, Athens - Greece
Tel /Fax : +30-1-7774178

TECHWARE EUROPEAN TRAINING COURSE - SP6

MANAGEMENT OF IRRIGATION SYSTEMS

Athens, Greece - 16-20 March 1992

Please, send me :
more information about the course
an application form

Name

Address

Return to : Mr. O. Manoliades, Laboratory of Rural Technology
National Technical University of Athens
15773, Athens - Greece

TRITON starts successfully

In the first training course of the COMETT pilot project TRITON it has shown to be possible to run a course with the **total European dimension**, e.g. having both teachers and learners coming from several European countries in the same course. Even a learner from Japan has been enrolled in the course.

The training course is focusing on 'Integrated urban Runoff' and is run in the electronic classroom based on a computer conferencing system called 'PortaCOM'. It is a long term training course running over 14 weeks and much efforts have been put into exercises by which the learners can show their understanding of the topics introduced by lecture notes. The exercises are primarily based on computer applications.

For further informations contact :

Assoc. Professor Per Jacobsen
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Tel : +30-81244783
Fax : +30-81246407

SAST

Strategic Analysis in Science and Technology

Project 6 : Research and Technological Development for the Supply and Use of Freshwater Resources.

CEC-DGXII is aware about the general knowledge gap which exists between quantity and quality aspects in water problems. SAST Project 6, as a guide for future EC research and technological development programmes, addresses specifically this gap.

TECHWARE was commissioned to prepare expert reports on

- Fresh water demand and use
- New sources and better use of existing sources

Two expert teams were established, involving some 25 TECHWARE members

who prepared during about 10 months a draft final report, structured in three volumes.

The draft-final report will be discussed by SAST for further processing towards a Workshop in Spring 1992.

This very first attempt of TECHWARE, newly founded when the call arrived in July 1990, to put its network of experts at work, has been a fruitful experience.

NEWS from FORCE

Continuing Vocational Training in Europe

TECHWARE submitted on 31 July 1991 a project proposal prepared by UK-member HR Wallingford Ltd. entitled "Continuing Vocational Training in the European Water industry". Besides HR Wallingford, acting as coordinator on behalf of TECHWARE, other partners involved in the project are : Lab Services, Yorkshire Water (UK); Sheffield City Polytechnic (UK); AMGA, Genova (I); UPV, Valencia (E).

The project will be concerned with :

- surveying existing vocational training provisions and identifying future vocational training needs within the European water industry
- comparing vocational training programmes, qualifications and standards
- developing a directory, database of information and network for dissemination of vocational training programmes
- transferring existing vocational training programmes and materials related to urban drainage and aquatic environmental chemistry between European countries

Please contact :

Mr. J. Millns, HR Wallingford Ltd.
UK- OX10 8BA Wallingford, Oxfordshire
Tel : +44-491-35381
Fax : +44-491-32233
Telex : 848552

MISCELLANEA

ON YOUR DESK

TECHWARE-member HR Wallingford UK has produced and published "Bringing professionals together through information exchange" within the framework of IPTRID - International Programme for Technology Research in Irrigation and Drainage.

It is a proposal for a worldwide network with a modular structure covering a wide range of services for information exchange and institutional support in the field of irrigation and drainage.

Contact :

HR Wallingford Ltd., Wallingford,
Oxfordshire OX10 8BA, UK
Tel +44-491-35381
Fax +44-491-32233
Telex 848552

CEC - DE

Employment, Industrial Relations and Social Affairs

Employment in Europe - 1990

172 pp. Price : 11.25 ECU
ISBN 92-826-1517-0

Employment in Europe - 1991

168 pp. Price : 11.25 ECU
ISBN 92-826-2916-3

Both also available in all other EC-languages. Each publication discusses prospects, issues and policies. The 1990 issue has a chapter on "The environment and employment : a new balance in economic development".

INFO

BRITE - EURAM

Brite-EuRam II is the new EC-DGXII programme on Industrial and Materials Technologies.

Project actions include :

- Industrial Research
- Focused Fundamental Research
- Cooperative Research

An EXPRESSION OF INTEREST (EOI) form can be filled in. TECHWARE-members having interest in this programme may contact the TECHWARE office or contact directly : CEC-DGXII-C
Brite-EuRam II Programme-EOI
Montoyerstraat 75
B-1040 Brussels

Tel +32-2-2352345 / Fax +32-2-2356046

DECEMBER 1991

1
Rennes (F)
AUEF Bretagne
Université de Rennes
Short course
Activité biologique dans les sols et qualité de l'eau

2
12/12
Wallingford (UK)
SEMINAR
Reservoir sedimentation

3
12-13/12
Rome (I)
CONFERENCE
European Conference on Methodologies for Training Needs Analysis on Regional and Sectoral Basis

5
Delft (NL)
IHE-Delft
Short course - 1 week
Stochastic and Geostatistical Analysis in Groundwater Modelling

6
1/2-31/7
Budapest (H)
VITUKI
23th International Postgraduate course in Hydrology

7
1/2-31/7
Prague (PL)
Prague Agricultural University - Dept. Water Resources
International Postgraduate Training course : "Hydrological Data for Water Resources Planning"

2
4-6/2
Wallingford (UK)
HR Wallingford
An introduction to Sediment Size Analysis

2
25-27/2
Wallingford (UK)
HR Wallingford
Computer Modelling of Tidal Processes

8
25-28/2
Lelystad (NL)
TECHWARE Ca-course
Ecotoxicology : A tool for water quality management

8
Brussels (B)
TECHWARE ETC SP2.1
Basics of mathematical Groundwater modelling

8
Genova (I)
2-6/3
TECHWARE ETC SP1.4
GIS-Water resources evaluation and exploitation

10
2-5/3
Tampere (SF)
Tampere University of Finland
Short course
Pulp & Paper Industry Wastewaters

11
2-6/3
Zürich (CH)
Institute of Hydromechanics and Water Resources Management
"13th International Course Groundwater pollution by mineral oils and organic solvents"

8
16-20/3
Athens (GR)
TECHWARE ETC SP6
Management of Irrigation systems

12
16-20/3
Paris (F)
The Ninth International Conference on Technology and Education

JANUARY 1992

1
Rennes (F)
AUEF Bretagne
Université de Rennes
Short course
Analyse d'images et ressources en l'eau

4
6-8/1
Antwerpen (B)
Solid Liquid Separation Technology

28-30/1
Wallingford (UK)
Times Series Rainfall

MARCH 1992

8
Delft (NL)
TECHWARE ETC SP2.2
Regional hydrological systems analysis

9
Genova (I)
Water distribution networks planning and maintenance

1
Rennes (F)
AUEF Bretagne
Université de Rennes
Short course
Analyse multicritère de la gestion de l'eau

13
Spring 92 (UK)
Sunderland Polytechnic UETP-EEE Short course
Natural and Technological Control of Groundwaters from Waste Disposal Sites

2
24-26/3
Wallingford (UK)
River Engineering

2
30/3-3/4
Wallingford (UK)
Costal Surveying

FEBRUARY 1992

1
Rennes (F)
AUEF Bretagne
Université de Rennes
Short course
Epuration agronomique des effluents

CALENDAR

APRIL 1992

14 12-15/4
Wageningen (NL)
Changes in Agriculture and Environment : a challenge for Higher Education
European conference on Higher Education in Agriculture

15 26/4-1/5
Weimar (D)
International Conference on Technology Education

16 28-30/4
Lisboa (P)
COMNET
2nd European Forum for Continuing Engineering Education : "International Cooperation between Industry and Academy"

MAY 1992

8 Den Haag (NL)
TECHWARE ETC SP3.2
Treatment processes for drinking water

8 Athens (GR)
TECHWARE ETC SP7
ACMOBI - Data Management using CDS/ISIS

5 7/5
Delft (NL)
IHE Delft
Short course - 6 weeks
SEMINAR
Seminar on Port Management

17 25-29/5
Budapest (H)
SEMINAR
Education in Computational hydraulics and hydrology
Hydrocomp '92

JUNE 1992

18 Antwerpen (B)
TECHWARE ETC SP1.1
Fresh Water Conservation
Reuse of treated wastewater
Pollution safeguards

18 Lisboa (P)
TECHWARE ETC SP1.2
Flood Hazards in Mediterranean countries

8 Barcelona (E)
TECHWARE ETC SP2.4
Inverse modelling techniques

8 Dubrovnik (YU)
TECHWARE ETC SP5.2
Radars and rainfall in urban hydrology : interactions

13 2-5/6
Helsinki (SF)
Helsinki University of Technology
5th World Conference on Continuing Engineering Education

19 8/6-3/7
Reston, Virginia (USA)
International training course
Techniques of Hydrological Investigations for International Participants

20 10/6-5/8
Moscow (USSR)
Moscow State University
International Higher Hydrological Course on the Scientific Basis of Research and utilization of Ground-water Resources

5 23/6
Delft (NL)
IHE Delft
Short course - 6 weeks
Anaerobic Waste Water Treatment

5 23/6
Delft (NL)
IHE Delft
Short course - 8 weeks
Water Quality Management for Decisionmakers

5 23/6
Delft (NL)
IHE Delft
Short course - 8 weeks
Low-Cost Water supply and Sanitation

5 23/6
Delft (NL)
IHE Delft
Short course - 8 weeks
Applied Ecology

AUGUST 1992

18 Gent (B)
TECHWARE ETC SP3.3
Waste water treatment processes

21 17/8-27/11
Wageningen (NL)
International Agricultural Centre
International Post-graduate Course on Land Drainage

22 31/8-1/9
Firenze (I)
Meeting
ERASMUS ICP-91-B-1138

SEPTEMBER 1992

18 Genova (I)
TECHWARE ETC SP3.3
Waste water treatment processes

8 Lisboa (P)
TECHWARE ETC SP2.1
Basics of mathematical Groundwater modelling

8 Newcastle (UK)
TECHWARE ETC SP2.3
Groundwater flow-paths and pollutant transport

5 Delft (NL)
IHE Delft
Short course - 6 weeks
Senior Advanced Course on Appropriate Modernization and Management of Irrigation Systems

22 1/9
Postgraduate Programme in Hydrology
Diploma-course (9 months)
MSc. or MEng. course (18 months)

5 8/9
Delft (NL)
IHE Delft
Short course - 6 weeks
SEMINAR
Seminar on Coastal Zone Management

5 15/9
Delft (NL)
IHE Delft
Short course - 3 weeks
Senior Advanced Course on Lowland Development

OCTOBER 1992

18 Cosenza (I)
TECHWARE ETC SP3.2
Treatment processes for drinking water

8 Genova (I)
TECHWARE ETC SP7
ACMOBI - Data Management using CDS/ISIS

5 Delft (NL)
IHE Delft
Short course - 1 week
Applied Modelling of Ground Water Pollution

NOVEMBER 1992

5 October 1992
Delft (NL)
Post-graduate Diploma
courses (11 months) and
MSc-courses (6-8 months)
**Hydraulic Engineering
Hydrology
Sanitary Engineering
Environmental Science
& Technology
Water Quality Man-
agement
Advanced Environmen-
tal Sanitation**

8 Lyngby (DK)
TECHWARE ETC SP.5.3
**Radars and rainfall in
urban hydrology:
engineering aspects**

5 Delft (NL)
IHE Delft
Short course - 1 week
**Applied Modelling of
Ground Water
Chemistry**

26 3-15/11
Erice, Sicily (I)
International School of
Water Resources
Management
13th Course
Coping with floods

23 1/10
Gent (B)
State University of Ghent
Msc in 2 academic
years
**Internuniversity
Postgraduate Training
in Aquaculture**

24 1/10
Gent (B)
State University of Ghent
Centre for Environmen-
tal Sanitation
Msc in 2 academic
years
**Internuniversity
Postgraduate Training
in Environmental
Sanitation**

25 1/10
Gent (B)
State University of Ghent
Msc in 2 academic
years
**Interdisciplinary
Postgraduate Pro-
gramme in Desert
Science (Eremology)**

8 19-23/10
Valencia (E)
TECHWARE ETC SP.4
**Water Supply Systems
State-of-Art
Future Trends**

AUGUST 1993

27 30/8-12/9
The Hague (NL)
**Research and train-
ing programmes and
their influence on
institutional manage-
ment performance**

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- 27 **ICID 15th Congress - Question 45.6**
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Drainage (ICID)
Congress 1993, c/o Holland Organizing
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NL-2514 EE The Hague

Note: In view of PANTA RHEI's objectives, this calendar includes only educational and training or related activities in the field of water and ERASMUS-ICP, TEMPUS-JEP and COMETT-meetings.

Training at HR Wallingford

HR Wallingford is a high technology research, consultancy and training organisation specialising in civil engineering hydraulics and management of the water environment.

Training activities include transfer of key technologies and skills through:

- study programmes
- fellowships and research placements
- courses, seminars and conferences
- publications
- software and equipment sales and training

To find out more, contact:

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Tel. + 44 491 35381 Fax. + 44 491 26703



HR Wallingford

FRACTALS

Weisst Du noch von Rom, liebe Lou ? Wie ist es in Deiner Erinnerung ? In meiner werden einmal nur seine Wasser sein, diese klaren köstlichen bewegten Wasser, die auf seiner Plätzen leben ; seiner Treppen, die nach dem Vorbild fallender Wasser erbaut, so seltsam Stufe aus Stufe schieben wie Welle aus Welle . . .

Rilke an Lou Andreas-Salomé
Rom, Via del Campidoglio 5
am dritten November 1905

Ref. : Rainer Maria Rilke - Lou
Andreas-Salomé Briefwechsel.
Max Niehaus Verlag AG, Zürich
und Insel Verlag Wiesbaden,
1952, p. 114.

STUDENT OPPORTUNITIES

EERO European Environmental Research Organisation FELLOWSHIPS

Short-term fellowships, of one week to three months duration, are available. These are for scientists who wish to initiate collaboration, learn newly developed techniques or use special facilities in a laboratory in another European country. Awards are not limited to Ph.D holders. Provision is made for travel and subsistence, but not for a bench fee. Applications for short-term fellowships can be made at any time and are decided upon soon after receipt of the completed form. Long-term fellow-

ships (one or two years) are also available. Enquire about details and deadlines.

Application forms and further details may be obtained from the EERO, P.O. Box 191
NL-6700 AD Wageningen
The Netherlands
fax : +31-8370-84818

J O B V A C A N C I E S

University of Bristol
Department of Civil
Engineering

VACANCY FOR A RESEARCH ASSISTANT IN HYDRAULIC ENGINEERING

Applications in writing should be sent to Professor R.H.J. Sellin from whom further particulars can be obtained.

Professor R.H.J. Sellin
University of Bristol
Department of Civil Engineering
Queen's Building, University
Walk
UK - Bristol BS8 1TK
Tel : ++(272)+303280
Fax : ++(272)+251154

State University Groningen
Department Physical Geography
Faculty of Mathematics and
Natural Sciences

VACANCY FOR HYDROLOGIST (m/f)

For further information, please contact :

Professor A.W.L. Veen
Tel : +31-50-636142
or
Dr. W. Klaassen
Tel : +31-50-636141

International Water Supply Association
Association Internationale des Distributions d'Eau

UNITING THE WORLD OF WATER
LE MONDE DE L'EAU S'UNIT

I W S A



A I D E

The "MAARTEN SCHALEKAMP AWARD"
is to be awarded in Budapest, October 1993
Le "PRIX MAARTEN SCHALEKAMP"
sera attribué à Budapest en octobre 1993

includes two prizes, intended to motivate young engineers and scientists, both for scientific research and innovation oriented work in water supply, one to be awarded to entrants employed full-time in practice of water supply, the other to a full-time student in a water-related field

comprend deux prix, visant à motiver de jeunes ingénieurs et chercheurs, pour des travaux de recherche scientifique ou d'innovation dans le domaine de la distribution d'eau; l'un sera remis à un candidat engagé à plein temps dans un domaine lié à la distribution d'eau, l'autre à un étudiant à plein temps engagé dans des études se rapportant à la distribution d'eau.

Information :
International Water Supply Association (IWSA)
Association Internationale des Distributions d'Eau (AIDE)
1 Queen Anne's Gate
London, SW1H 9BT, Great Britain

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)

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• positions available	6
• courses, workshops, meetings	8
• services, supply	10

At cost per page or part of it : display advertising

• full page	1000
• half page	500
• quarto page	250
• octavo page	125

Special placements or enclosures : give details and ask for rates

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 one of the water related ERASMUS, COMETT or TEMPUS projects.

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- Change address as shown
- Please publish the enclosed training informations (calendar format) in the next issue
- Please publish the enclosed information as classified and send me the invoice
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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 the ERASMUS, COMETT and TEMPUS programmes and distributed free of charge. The present distribution is 3,500 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 and TEMPUS 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.

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.

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

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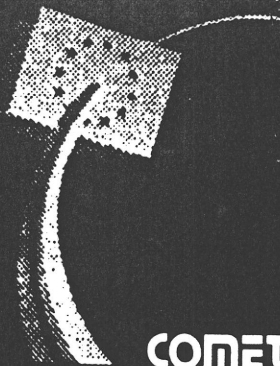
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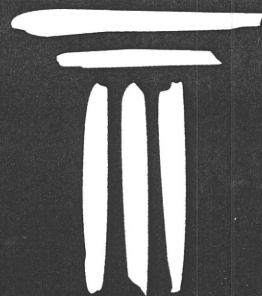
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ERASMUS



COMETT



Tempus

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the ERASMUS, COMETT and TEMPUS Programmes of the European Community (EC)

Informatie Bulletin voor 'Onderwijs in hydrologie en waterbeheer' en 'Opleiding voor technologie van de watervoorraden'

Bulletin d'Information pour l' 'Education en hydrologie et la gestion de l'eau' et la 'Formation pour la technologie des ressources en eau'

Informationsblad om 'Uddannelse og efteruddannelse i tekniske emner knyttet til vand'

Boletín Informativo sobre la 'Educación en el campo de la hidrología y la gestión del agua' y 'Entrenamiento en tecnología de los recursos hídricos'

Bollettino di Informazione per 'Educazione in idrologia e gestione delle acque' e 'Formazione alla tecnologia delle risorse idriche'

Biuletyn Informacyjny dot. 'Nauczania w zakresie hydrologii i gospodarki wodnej' oraz 'Szkolenia w zakresie technologii wykorzystania i ochrony zasobów wodnych'