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INFORMATION

A LONG-TERM COOPERATION OF THE CZECH UNIVERSITY OF AGRICULTURE PRAGUE WITH UNESCO IN THE FIELD OF HYDROLOGY AND WATER RESOURCES

In the middle of the sixties, the United Nations World Plan of Action for the Application of Science and Technology to Development emphasized the urgent need for scientific manpower. A contribution towards the training of such manpower is UNESCO's general programme of education which received wide support from Member States.

In the field of hydrology and water resources the UN has established the UNESCO's Division of Water Sciences with the main programme for the next ten years called „International Hydrological Decade" (IHD). Apart from its research content, a robust educational programme including both education and training in hydrology for a broad spectrum of people from technicians to postgraduates was launched. During the IHD (1965–1975), its Coordinating Council invited Member States to indicate the kinds of training assistance that they could supply, and in particular the number of fellowships they were willing to reserve for hydrology students primarily from developing countries. UNESCO then has sponsored the establishment of postgraduate courses all over the world. Thus the network of 32 UNESCO-sponsored postgraduate courses has been created and accredited by Ministry of Education in a respective country. Since 1975 the International Hydrological Decade (IHD) has been extended to the regular Programme (IHP) of which the 4th phase is still running nowadays (IHP-IV).

In 1966, the Czechoslovak Government established an international postgraduate course titled „HYDROLOGICAL DATA FOR WATER RESOURCES PLANNING" at the Department of Water Resources Agricultural University Prague under the auspices of the Ministry of Education. Since that time, these courses have been regularly organized in each even year. The first courses lasted three months only; from the beginning of the seventies they have been organized in the duration of six months each. The curricula and syllabi have been developing accordingly with their duration in context with a development of hydrological sciences.

The main purpose of this course is to provide participants with a scientific background and with technological skill in collection, processing and retrieval of hydrological data for various facets of water resources, especially in agricultural and forest engineering. Emphasis is put on a multidisciplinary

character of hydrology in its connection with other subjects and on its environmental character.

The courses, running at the Department of Water Resources, Faculty of Forestry, held in English, are offered to those hydrologists who desire to enhance their hydrology knowledge and skills. They are from the Czech Republic and other countries, nowadays more and more from Central and Eastern Europe rather than from developing countries as it was so earlier. In fourteen courses running since 1966 about 200 graduates from 35 countries have participated. There were hydrologists from

Africa:	Egypt, Ethiopia, Ghana, Kenya, Lybia, Nigeria, Somalia, Sudan, Tanzania, Zimbabwe,
Asia:	Afghanistan, Bangladesh, China, India, Indonesia, Iraq, Iran, Nepal, Pakistan, Sri Lanka, Syria, Thailand, Turkey, Vietnam,
Central America:	Cuba, Equador, Jamaica, Uruquay,
Europe:	Bulgaria, Czech Republic, Hungary, Poland, the Netherlands, Roumania, Russia, Slovakia.

The course lecturers have been recruited from Czech Agricultural University Prague, Czech Technical University, Charles University, Hydrometeorological Institutes Prague and Bratislava, Water Research Institute, Institute for Hydrodynamics (Czech Academy of Sciences), Institute of Hydrology and Hydraulics (Slovak Academy of Sciences) and ocassionally from other institutions. Apart from that there were many specialists from abroad who delivered lectures in the course, in particular from the UN agencies, namely from UNESCO (Paris), WMO (Geneva), FAO (Rome), IAEA (Vienna) and from many universities e.g. IHE Delft, AU Wageningen, TU Braunschweig, VU Brussels, TU Dresden, ETH Zurich, etc.

The course curriculum consists of about 25 subjects including computational and laboratory training. Inseparable part of its training content are study trips and a field training. The basic subjects to be taught are :

- Statistics
- Stochastic Processes
- Computer Programming
- Use of Microcomputers
- Hydrogeology
- Surface Water Hydrology
- Subsurface Flow
- Elementary Hydraulics
- Evaporation
- Water Resources Development Planning
- Water Quality

- Regional Hydrology
- Impact of Global Climate Change on Water Resources
- Hydrological Models
- Computational Hydraulics
- Hydrological Forecasting
- Reservoir Operation
- Water Resources Systems Analysis
- Environmental Engineering
- Hydroinformatics
- Instruments, Networks and Data Processing Techniques
- Experimental and Representative Basins
- Remote Sensing
- Use of Isotope Tracers in Hydrology
- Hydrological Mapping

The course participants who master examinations get Diploma valid in the Member States of UN and be recognized by local employers. The course alumnies could usually find a better position on a hydrology job market. They often work in hydrometeorological services, water resources management, consulting companies, universities and other institutes or organizations.

The courses have successfully run even during the seventies when it was difficult to manage such a west-oriented activity. In 1992 it was beneficial to combine the course programme with the inter-university project TEMPUS. This year, unfortunately due to some budgetary and legislative difficulties, the 15th course had to be postponed to 1996. This interruption in a continuous course series has caused not only a disappointment of candidates for participation but also a gap in our UNESCO activities.

On the other hand, benefitting from a long-term successful educational tradition, our University together with the Czech Committee for IHP have been nominated for organizing the UNESCO-sponsored Workshop on International Postgraduate Hydrology Education.

The Workshop has taken place from August 28 to September 1, 1994. Thirty experts from 16 countries accompanied by the UNESCO representatives participated in the Workshop. The agenda prepared prior to the Workshop in the form of key-paper has included the following items:

1. Assessment of the present status of postgraduate education
2. Future trends for postgraduate hydrology education and training
3. Criteria for recognition as a postgraduate course
4. Manpower market analysis
5. Methodologies of course evaluation
6. Types of diplomas and their recognition

The Workshop had fully served for an evaluation of a present situation in postgraduate hydrology education and it had provided also future trends in hydrology education and training emphasizing in particular:

- Application of remote sensing and geographical information systems
- Using more computer-assisted learning
- Introducing more environmentally-oriented problems, including land degradation, erosion and consequences of improper land use
- Study of the impact of global/climate changes on hydrological and water resources systems and how these could be mitigated.

The Workshop has undoubtedly brought a great success in exchange of experience among postgraduate hydrology course organizers.

Our plans for the future are based on the existing long-term well ongoing cooperation with UNESCO and with other universities and research institutes home or abroad. We are prepared together with the Czech Commission for UNESCO, being supported by the Czech Committee for IHP, to make all necessary steps to run the next postgraduate hydrology course in the year 1996.

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