



Project title:

Development of knowledge centers for life-long learning by involving of specialists and decision makers in flood risk management using advanced Hydroinformatic tools

Project acronym:

KnoCH

Project type:

Leonardo da Vinci, Transfer of Innovation

Project duration:

24 months (01.01.2012 – 31.12.2013)

Project value:

330.771,00 EUR (EU Grant 248.064,00 EUR)

Partners:



POLITEHNICA
University Timisoara,
Romania



DHI, as, Prague,
Czech Republic



Budapest University of
Technology and
Economics, Hungary



Middle-Danube-valley
Water Management
Directorate, Hungary



National Institute for
Environment, Middle-
Danube-valley Branch,
Hungary

Partner P0 – lead partner: *POLITEHNICA University Timisoara (UPT), Faculty of Civil Engineering, Department of Hydrotechnical Engineering, Romania*

Politehnica University Timisoara is one of the biggest and most well-known technical universities from Central and Eastern Europe, founded in 1920. Department of Hydrotechnical Engineering, as part of Politehnica University Timisoara, has a Research Center for Modeling, Designing and Behavior Monitoring of the Hydrotechnical Developments. The center was set up in 2001 and recently certified by the Romanian Research Authority in Higher Education (CNCSIS certificate no. 5/12 Sept.2006). The main research fields of the center are: managing research projects in water engineering, design and technical assistance in hydrotechnical structures, modern technologies in water engineering, water biology and chemistry, water quality monitoring, numerical modeling in surface water and groundwater flow, numerical modeling of the pollutants transport in groundwater, land reclamation and

improvement, irrigations and drainages, soil science studies and erosion controls, surveying, cadastre etc.

P0 is an institution with a tradition of over 60 years, has experience in national and international projects. Most of the representative hydrotechnical works in Romania have been designed and studied in the laboratory with the help of staff from Department of Hydrotechnical Engineering. P0 has collaborations with universities from another countries: TU Graz - Austria, TU Darmstadt - Germany, HAKI Szarvas - Hungary, University of Debrecen - Hungary, TU Bethune - France, IHE Delft – Netherlands; staff members have been visiting professor at foreign universities and many have received scholarships in another countries for professional and doctoral training.

Department of Hydrotechnical Engineering is a consortium leader, responsible for smooth project management, coordinates partners` activities, provides the necessary basic human and IT infrastructure of the training centre in Timisoara. Its dedicated staff will attend the training course-serie in Budapest, Timisoara and in Prague to be able to hand over the gained knowledge in Romanian language to local project target group. P0 will develop course material in Romanian language contains the elaborated national survey results (assessment of the up-today needs). Responsible for creation of project website which serves as multi-lingual information communication channel (project news in Romanian language continuously).The Department is responsible for national level training execution, development and printing course materials for attendees, dissemination of project results in national and international level and to reach national recognition of training courses and to ensure elaboration of project results into post-graduate course.

Partner P1 – core partner: *DHI. as, Czech Republic*

DHI is an independent, international consulting & research organisation. It is a not-for-profit organization with a Board of Directors appointed by the Danish Ministry of Science, Technology and Innovation. DHI offers a broad range of consultancy services, reference material, software & hardware products and tools in wide fields of water, environment and health. DHI's consultancy services combine extensive physical/chemical and biological knowledge using the most advanced tools and technologies within numerical modelling, environmental laboratories and scale model test facilities, field surveys and monitoring programmes, and institutional capacity building & training. DHI has a staff of more than 1100, the majority of whom are professional engineers and scientists with postgraduate qualifications, several years of consultancy and Research and Development experience. With projects undertaken in more than 140 countries and subsidiaries in more than 20 countries DHI is truly an international organisation. DHI as, the Prague office, has 60 highly qualified staff, of half are specialized in water resource management. The continuous R&D enables DHI to continue providing partners with the latest know-how and the most advanced technologies and its project related activities ensure the up-to-day knowledge on the use of hydroinformatics in flood management.

DHI is a core partner is the responsible partner to hand over the technology by training of the future trainers of P0,P2 and P3 partners, providing MIKE 11 software, training materials developed for the training of trainers, handing over its teaching methodology as well as guarantee the qualified trainers for each training event. Beside these in the 2nd phase of the project DHI will organize and host an event in the Czech Republic (study tour) to show realized examples of the applied hydroinformatics in the Czech Republic.

Partner P2 – core partner: *Budapest University of Technology and Economics (BME), Department of Hydraulics and Water Resources Engineering, Hungary*

Budapest University of Technology and Economics was established 228 years ago. The Department of Hydraulic and Water Resources Engineering has 10 highly qualified academic staff and 5 PhD students. Its activities cover the fields of education (gradual and post gradual), research and consulting, including up-to-date international technology transfer and cooperation with universities, research institutes abroad. In this field different aspects of design and upgrading of water infrastructures, operation and control of facilities, management and river basin planning, are considered. Besides the gradual educational activities, we regularly offer a 1.5-year program of accredited courses in order to upgrade professionals' knowledge in the field of hydroinformatics. We have a good reputation, skilful staff and experience in adult training and computer-based information technology in national and international level. We have been participating in several transnational projects which are usually formulated by several European partners, and have been running an Erasmus-Mundus course in a consortium of several partner universities.

Role of BME in project: participation in project committee meetings; delegating staff to the trainings of trainers: some of its staff members will be the trainers who give training courses, besides Budapest in some centres of Hungarian regions; provide lecture room for in site courses and sufficient equipment (computers) for the development of the Hungarian modeling center in Budapest; localization and testing the knowledge and skills; responsible for training of Hungarian professionalists; development of educational materials adapted to Hungarian conditions in Hungarian language; organization of events and getting involvement of relevant sectors; dissemination and communication of project results; contribution to the project website news, to provide sufficient information in Hungarian language; tasks related to recognition of trained person's skills and knowledge gained from trainings.

Partner P3 – core partner: *Middle-Danube-valley Water Management Directorate, Hungary*

Middle-Danube-Valley Water Management Directorate (P3) has 287 highly qualified staff and operates on 8384 km² of Hungary, what covers the areas of Budapest, Nógrád county, 90% of Pest county and partly the areas of Heves-, Szolnok and Bács-Kiskun counties. Main tasks: The determination of the water management technical of the establishments, The provision of expert opinions in case of administrative procedures, participating in supervisions, Examination of water management complaints, Revealing the unlawful water use, and intake without authorisation, Hydrological services, hydrological-measuring and processing, Flood and drainage control, within the competence of the Directorate, The performance of consultancy tasks at the local water damage preventions, the preparation of the regional development plans, Activities related to the water resource charge for use, Participation in the environmental damage compensation and damage prevention procedures.

Middle-Danube-Valley Water Management Directorate as a core partner participates in project committee meetings and smooth project management in partner level. Delegating staff to the trainings, acting as test vocational partner, share experiences in applied water management and assist to hand over training results in most effective way to the targeted sector. Develop a study about needs of practicing water sector, contribution to the Hungarian adapted educational materials, organization of

events and getting involvement of the relevant sectors in Hungary and dissemination of the project results.

Partner P4 – core partner: *National Institute for Environment, Middle-Danube-valley Branch, Hungary*

The National Institute for Environment (NeKI) is a self-contained entity and the central budget authority, under the control of the Ministry of Rural Development, which not have independent legal status. The institute was established like a complex professional background institution based on environment protection, nature conservation and water management. NeKI have a central organ, located in Budapest, and 12 regional branch offices, whose operating area is the same of the competent Water Directorates.

Middle-Danube-valley Branch location is Budapest and the operational area is approximately 8384 km² - the same as Middle-Danube-valley Water Management Directorate jurisdiction area: Budapest, Pest county, except Abony, Albertirsa, Cegléd, Ceglédbercel, Csemő, Dánszentmiklós, Jászkarajenő, Kocsér, Körösterétlen, Mikebuda, Nagykőrös, Nyársapát, Pilis, Tápiószőlős, Törtel, Újszilvás areas; total area of Nógrád county; Heves county – areas of Apc, Boldog, Hatvan, Heréd, Kerekharaszt, Lőrinci, Nagykökényes, Zagyvaszántó. Total: 311 localities and 3 154 000 inhabitants.

Middle-Danube-valley Branch on own jurisdiction area shall provide to the Minister for Rural Development tasks and competence: river basin management and water and soil protection, water utility, air quality protection, protection against noise and vibration, waste management, nature conservation, environmental protection, and other tasks of the Ministry of Rural Development.

Middle-Danube-Valley Branch of National Institute for Environment as a core partner participates in project committee meetings and smooth project management in partner level. Delegating staff to the trainings, acting as test vocational partner, share experiences in applied environment protection and assist to hand over training results in most effective way to the targeted sector. Develop a study about needs of practicing environment protection sector, contribution to the Hungarian adapted educational materials, organization of events and getting involvement of the relevant sectors in Hungary and dissemination of the project results.

Aims and objectives of project:

1. To provide newest technical solutions and updated knowledge for the intensified water sector development via transfer of good `living` technology which is already running in different part of the world and was not accessible for the aimed target group due to language barriers and financial capacities. It will be solved by the training activities of skillful trained national trainers;
2. To establish sustainable, reachable `seats` of vocational life-long learning center for flood management where adjusted trainings will be available for professionalist in all age. National trainings will be ensured by the trained trainers using not only technology but techniques learnt in the first year of project execution;
3. To introduce a communication tool for target groups and to integrate their needs into training programme by the help of surveys;
4. To improve knowledge for technical solution assessment methods in integrated water/flood management thus to create basis for quality standard measures, improvements;

5. To provide not only theory of hydro-informatics but its application evidences as well: experience of the real application of the presented IT technology (`I can believe if I can see` principle) and start real on-site discussion by participation of representative of different sectors;
6. Rise better availability to the European labour market, to contribute to the personal carrier of practicing engineers;
7. Set up a regional `Excellent Network` for applied hydro-informatics for life-long learning, where high quality co-operation between institutions and enterprises providing learning opportunities was established.

Contribution to national priorities:

The project addressed to following national priorities:

1. Development centers of excellence in VET (there is a need to develop quality referential domain and their certification to European standards).
2. Promoting FP (professional training) in the life sciences (there is a need to balance technical development / performance profile on the European market / Romanian / Hungarian with FP in the field).
3. Exchange of best practice in the recognition and validation of learning results in informal / non-formal contexts.
4. Institutions / organizations in geographic areas with poor participation in the program LdV / TOI.

Project milestones

- Trained national trainers (Romanian, Hungarian) –realize: beginning 2013
- National training centers in Romania and Hungary – realized in 2012 first half
- Developed national training materials – realize till early 2013
- National events – national seminars on local languages in Romanian and Hungary – realize till late 2013
- Local (national level) Certificates on trainings – realize till early 2013
- Field trip to the Czech Republic - realize in late 2013.

Public project activities

- Local trainings in Hungary: 19 September 2013 Győr, 25 September 2013 Debrecen, 26 September 2013 Budapest, 27 September 2013. Pécs - *Numerical basis of modelling and practical applicability* - 128 participants
- Local trainings in Romania: 18-20 April 2013, 23-25 May 2013, 11-13 July 2013, Timisoara – *Hydrodynamic modelling using advanced hydroinformatic tools* – 57 participants
- Informations for the participants of the national level courses (the national level certificates)
- National level dissemination (conferences and publications)
- Field trip to the Czech Republic - 29-30 August 2013
- Closure conference - 3 December 2013, Timisoara, Romania



Internal project activities:

Project management activities

7 March 2012 - 1st project management meeting, Prague, Czech Republic
5 September 2012 - 2nd project management meeting, Prague, Czech Republic
19 March 2013 - 3rd project management meeting, Budapest, Hungary
2-3 May 2013 - 4th project management meeting, Prague, Czech Republic
18 June 2013 - 5th project management meeting, Timisoara, Romania
13 November 2013 - 6th project management meeting, Budapest, Hungary
2 December 2013 - 7th project management meeting, Timisoara, Romania
10 December 2013 - 8th project management meeting, Prague, Czech Republic

Series of training of national trainers





First half of March 2012 – Training session 0 “Mathematical basis of modeling, Hydraulical basis of modeling”, Timisoara – Romania, Budapest – Hungary

20-22 March 2012 – Training session 1 “Introduction to River and Channel Modeling by MIKE and Advanced Hydrodynamic Modelling”, Budapest – Hungary

16-17 May 2012 - Training session 2 “Rainfall-Runoff (RR) Modeling”, Timisoara – Romania

25-29 June 2012 - Training session 3+4 “Sediment Transport (ST) Modeling + Water Quality Modeling”, Prague – Czech Republic

5-7 September 2012 - Training session 5 on-job training, Prague – Czech Republic

Information:

<http://www.adam-europe.eu/adam/project>

<http://vit.bme.hu/tovabbkepzes/knoch/index.htm>

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