

It was hard to give an answer to such a problem especially when you are expected to help with your studies and propose solutions that might have repercussions at a local level. I do consider these solutions can be found in interdisciplinary research approaches.

Interdisciplinary research has never been easy and by definition, it integrates perspectives and methods from two or more disciplines. Excellent scholars and talented leaders are needed for the integration of the research work but this has to be accompanied by a solid knowledge of each discipline involved in a fertile dialogue. A dialogue that implies a deep change of the research objects and theoretical frameworks. In order to succeed in the research process, it is essential to use a common frame of reference, shared theoretical tools, and a rigorous “technical” language.

In this participatory approach, everyone needs to interact with each other in order to understand what happens by encouraging discussions and changes between the different actors. In this way, the survey will take place in a “permanent research laboratory” involving local communities, social and natural scientists. Thus, the research is not a model of top-down intervention, but a discussion and exchange between the different stakeholders about human-environment relationship and nature protection that integrates the questions and needs of the society into research and provide feedback from research to the society.

## News and Notes

### EcoManAqua – A CEEPUS network fostering mobility of students and university teachers in the Danube basin

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An EU-project funded under FP7 (DANCERS) identified major shortcomings in joint university education programs related to integrated river basin management (Irvine et al. 2016). In particular, a coherent network related to training in aquatic sciences, water management and sustainable development in South East Europe is lacking. Following this conclusion, a group of scientists from Central, Eastern and South Eastern Europe got active and established the network “Ecology and Management of aquatic ecosystems in Central, East and Southeast Europe” (Acronym EcoManAqua). EcoManAqua was accepted as umbrella network by the program CEEPUS, the Central European Exchange Program for University Studies. CEEPUS is an international exchange program which provides mobility grants for university students and academic teachers among member countries in Central and Eastern Europe and the Balkan Peninsula. It is the product of an international agreement signed by the member states of CEEPUS.

Only in collaboration with local communities a better understanding of fishers’ perceptions and cognitions can be established and their needs integrated so that new information can be provided and used in fisheries management which accounts for the requirements of nature protection. Of course, this can be done in a common effort and reciprocal dialogue and trust between social and natural sciences, fishers and policy officers.

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The network comprises 15 universities from 11 countries out of which 10 are situated in the Danube River Basin. Apart from the University of Natural Resources and Life Sciences Vienna which acts as coordinating institution, these are relevant faculties from the University of Sofia, the Jossip Juraj Strossmayer University of Osijek, the University of Zagreb, the Palacký University Olomouc, the University of Bucharest, University of Belgrade, University of Ljubljana, the University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, and the Dunarea de Jos University of Galati. The University of Tirana, the University of Montenegro in Podgorica, the Charles University in Prague and the University of South Bohemia České Budějovice as well as the Warsaw University of Life Sciences are located in adjacent river basins.

The motivation to establish a network in interdisciplinary aquatic ecosystem sciences was (1) to address major challenges related to the alteration and modification of aquatic ecosystems such as rivers, wetlands, lakes and coastal waters, (2) to address the interplay with human

society and (3) to provide means to improve the scientific excellence of all involved partners by intensified and focussed educational activities. EcoManAqua focuses in particular on aquatic biodiversity change (e.g. invasive species), the imbalance of the sediment transport as well as hydromorphological and water quality change. It acknowledges that varying and intensifying human uses led to societal conflicts related to the provision of riverine ecosystem services such as production of goods, transport, power generation, limited self-purification potential and regulation of the regional water balance, tourism and conservation and restoration of heritage sites to name but a view. These management challenges are emphasized by ICPDR and they are expected to lead to even more severe changes, if future drivers of change such as climate change and demographic shifts and the effects of multiple pressures are taken into account. The activities implemented by the network aim in general to achieve a better understanding of complex interacting societal and environmental processes.

Short and long-term students and teachers exchange including joint supervisions of master and PhD students as well as further educational joint activities should help to

- Establish a well-working active network in the field of aquatic sciences and ecosystem management based on the common strategy of the network
- Increase and improve the number of students' and

teachers' mobility and establish joint activities such as summer schools or short term excursions

- Exchange expertise to foster targeted joint research activities especially in Central, East and South East Europe-Programs.
- Explore the potential of joint programs based on existing programs and initiate new activities in that direction to guarantee long term cooperation
- Disseminate, promote and publish network activities in cooperation with existing networks and based on the well-established capacity among partners
- Improve the level of mutual use of ICT communication (SKYPE, web conferences, other web based tools, e-mails) and of communication tools of involved partners
- Built bridges to further EUSDR initiatives and intensified linkages to other existing networks and stakeholder groups.
- Foster contributions to international conferences in the field of interdisciplinary aquatic sciences and ecosystem management in the region in the coming years.

Further details on the programme and mobility opportunities can be found at <http://www.ceepus.info/#nbb>.

Irvine K, Weigelhofer G, Popescu I, Pfeiffer E, Păun A, Drobot R, Gettel G, Staska B, Stanica A, Hein T, Habersack H (2016): Educating for action: Aligning skills with policies for sustainable development in the Danube river basin. *Science of the Total Environment* 543 A, 765-777

## HR 21 – a new interdisciplinary Doctoral School to address present and future challenges of Human-River-Systems in the 21st century

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Inter- and multidisciplinary approaches are required today by many research funds and programs. Interdisciplinarity is a major term and guiding principle of a multitude of individual research projects. Many researchers acknowledge that this is needed to solve the pressing challenges of today's societies and the earth's environment. Nevertheless, it is often concluded that the term is used as a mere buzzword and lacks adequate consideration in the practical implementation of projects. One reason might be a lack of training and expertise which is necessary to tackle the complexity evolving from inter- and multidisciplinary research.

Recognising the need for education in inter- and multidisciplinary research, the University of Natural Resources and Life Sciences, Vienna (BOKU), has developed and established

a new Doctoral School. PhD-students shall be enabled to address and understand riverine landscapes as complex systems which are subject to inherent natural dynamics and processes and simultaneously affected by long-term multiple pressures which are driven by changing societal demand, far-ranging technical interventions and an intense use of partly conflicting ecosystem services. The industrialised riverine landscapes (IRL) we find today are heavily modified and thus hybrid systems. Complex interaction between environment and societal processes and the co-evolution of these two spheres urgently require a socio-ecological systems approach in both science and management.

The faculty of the doctoral school involves 15 scientists from BOKU and the Alpen-Adria Universität Klagenfurt (AAU)/ Faculty for Interdisciplinary Studies in Vienna (IFF). They join their expertise in terrestrial and aquatic ecology, engineering and technical sciences focusing on water engineering in river systems, social sciences and humanities addressing land and water use competition, ecosystem services, spatial planning, (urban) infrastructures and resource demand (e.g. hydropower, water supply) as well as cultural programs in the past, present and future of IRL.