



Figure 1. The interdisciplinary approach of HR21

HR21 aims to address critical knowledge gaps in IRL- and coupled socio-ecological systems research as well as to develop new analytical and modelling tools. A new generation of scientists shall be trained in a multi- and trans-disciplinary environment and interdisciplinary Human-River-System research shall be strengthened. HR21 targets to provide a new interdisciplinary understanding of the future development of IRL and their efficient and sustainable management. The program starting in 2018 will also foster international cooperation by creating an international working atmosphere at several levels (e.g. international experts in

mentoring teams, research stays abroad, guest scientists) and will establish linkages to other national and international programs, thus increasing the number of PhD students in that field.

The ultimate long-term goal of HR21 is to establish a centre of excellence for socio-ecological system research of riverine landscapes in Austria. The Danube and its tributaries will be a strong spatial focus and international cooperation on the catchment level is a clear necessity in this new endeavour.

INADAR – a EU-Life Project addressing current problems in a modern river management in Southern Germany

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EU-Life Project INADAR (Innovative Approaches to Dam Restoration and the Environmental Improvement of River Banks)

Many dams along the impoundment area of barrages are now in need of restoration and must be elevated for flood protection due to increased requirements. For dam elevation the dam is usually widened not on the water but on the air side, resulting in higher land consumption and damages on

the riparian forests (often FFH areas). Usually, extensive authorization procedures are necessary and high costs for the rehabilitation occur.

As part of the EU-Life project INADAR, an innovative approach for ecological dam restoration is developed and implemented in two test sites. The restoration and/or elevation of the dams and the improvement of the ecological situation according to the Water Framework Directive (WFD) should be fulfilled effectively and economically in one process. The focus is the installation of so-called 'eco-berms' that ensure dam stability as well as the improvement of the ecological situation in the shore area of the dams. Due to the implementation of the measures solely on the water side damages on the riparian forest can be completely avoided.

The specific project objectives are therefore:

- Efficient restoration of embankments with and without dam elevation
- Significant improvement of the ecological situation in the shore areas
- Avoidance of damages on the existing riparian forests
- Lower costs for dam restoration and dam elevation and thus lower barriers for necessary flood protection measures and environmental improvements
- Development of simplified approval processes by developing general conditions for the application of 'eco-berms' together with concerned stakeholders

The 'eco-berms' are suitable for all dams, where the discharge capacity does not play a key role for flood protection, e.g. in the storage area of hydropower plants or waterways.

For the pilot approach in the Upper Danube, two pilot projects are developed under supervision of the BEW (Bayerische Elektrizitätswerke GmbH) in partnership with regional stakeholders. The project is accompanied and evaluated by the University of Innsbruck, the Aueninstitut Neuburg and the TU Munich.

Status of the progress and outlook

Within the next months, the measures for the test sites at the hydropower plants Offingen and Oberelchingen will be



Figure 1. Installed 'eco-berm' at Offingen hydropower plant. On the opposite side there is still the traditional concrete embankment.

planned in detail. In parallel, the evaluation concept is developed. First surveys of the actual situation, which serves as a reference state for the effect of the 'eco-berms', are realized. The installation of the test sites in the storage space Offingen has taken place in fall 2016, the test site at the Oberelchingen is under construction since spring 2017.

Other aspects that will be part of the project include simplifying the approval process together with the relevant stakeholders as well as the promotion of the project results on EU level. For more information, see www.inadar.eu.

Lives Among Waters – a film from Oana Ivan

On May 16th, BOKU University hosted the Austrian premiere of the documentary "Lives among Waters", a film about the life in the Danube Delta, made by Dr. Oana Ivan.

The movie was presented in the frame of the CEEPUS network EcoManAqua in the workshop "A view on the Romanian aquatic life – endangered or invaded?".

The documentary is focused on understanding the livelihoods of the fishermen living inside the Danube Delta UNESCO Biosphere Reserve. Based on a PhD research in anthropology, the film follows the story of the local people over a period of seven years looking at the ways tourism and environmental protection deeply affects the community, as locals are being marginalized and ignored.

After the presentation, filmmaker Dr. Oana Ivan was present for an exchange with the audience. The discussion pointed the burning issues that should be on the top agenda of the policy-makers and sustainable development projects managers for protected areas. As Prof. Thomas Hein emphasized, the current management approach in

the Danube Delta is partly the result of the gap between institutional approaches and the living situation of the local population. The local knowledge and historical development of the environment including any aspects of human – nature interactions should be considered when tailoring the conservation programs. The traditional approach of humans against nature has been shown to limit our achievements in more sustainable ecosystem management, while acknowledging the history of a coupled co-evolution of humans and their environment might be a suitable future approach.

The event was organized by Dr. Andreas Zitek, and also hosted the presentation of Dr. Daniel Cocan from University of Agricultural Sciences Cluj Napoca, invited at BOKU through a mobility grant of Ecology and Management of Aquatic ecosystems in Central-East and South-East Europe program (through CEEPUS).

A trailer of the film is available at:

https://www.youtube.com/watch?v=QcKi_KpRmPO