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International collaboration project: protection of riparian forests in Kyrgyzstan

The preservation of riparian forests along the Naryn river in Kyrgyzstan is the objective of the international and interdisciplinary project “ÖkoFlussPlan” which start in August this year and will be led by Prof. Dr. Bernd Cyffka (Professorship of Applied Physical Geography and Head of the Neuburg-based KU Floodplain Institute). The three-year project involves a total of 14 partner institutions from Germany and Kyrgyzstan and bears the full title “Erhalt ausgewählter Ökosystemleistungen in den Flussauen des Naryn/Kirgisistan durch erneuerbare Energien und Kurzumtriebsplantagen unter Einbezug eines nachhaltigen Land- und Wassermanagements und Capacity Buildings” (Preservation of selected ecosystem services in the floodplains of Naryn/Kyrgyzstan by using renewable energies and short rotation forestry under involvement of a sustainable land and water management and capacity buildings). The German Federal Ministry of Research supports “ÖkoFlussPlan” with 860,000 euros. German project partners are amongst others the Technische Hochschule Ingolstadt, the Technical University of Munich and the Eberswalde University for Sustainable Development. In Kyrgyzstan, several municipalities, authorities and NGOs, Naryn State University and Kyrgyz State University for Construction, Transport and Architecture are involved in the project.



A typical river landscape on the Naryn. The river and its dynamics were barely influenced by humans, which means that it has a largely intact river ecosystem that can be investigated. (Photo: Betz/upd)



Project team member Florian Betz checking a soil humidity measuring instrument at the Naryn floodplains in the context of an earlier project. Soil humidity is one of the most important parameters for a natural development of floodplain vegetation. (Photo: Rauschenberger/upd)



(f.r.) Head of the project team Prof. Dr. Bernd Cyffka with team members Magdalena Lauermann and co-worker Florian Betz. (Photo: Schulte Strathaus/Press Office)

More than 50 per cent of the world's large rivers have been altered by humans. The floodplain ecosystems along the Naryn in Kyrgyzstan, however, have remained in their natural state. This not only makes these floodplains a popular hot spot for regional biodiversity but could also provide valuable insights into the natural dynamics of river systems that can no longer be gained in Central Europe.

For people living along the Naryn river, the floodplains are an important provider of firewood and pasture areas and offer recreational areas and protection against erosion. However, chopping firewood and cultivating pastures endangers the floodplains' preservation in the long term. Furthermore, a planned barrage cascade at the upper course of the river poses a threat to the natural dynamics of the river system and its biodiversity. "Local decision-makers are confronted with a major conflict between wanting to ensure supply of the population with resources from the floodplains, supporting the country's development by expanding on water power and preserving the natural ecosystem and biodiversity", explains Prof. Cyffka, who is also head of the Floodplain Institute Neuburg. Over the next three years, a team of German and Kyrgyz scientists will carry out

research on this conflict by involving Kyrgyz decision-makers from different fields and the local population in order to develop recommendations for action.

By participating in the “ÖkoFlussPlan” project, the KU expands on experience gathered in an earlier project that was funded by the Volkswagen Foundation from 2014 to 2017 and also focused on strategies for sustainable use and preservation of floodplains in Kyrgyzstan and China. The new project has the aim of preserving the floodplains along the Naryn and implementing and offering sustainable energy resources for the local population at the same time. In order to reduce utilization pressure, the researchers seek to develop alternatives for timber extraction from the floodplains. They recommend establishing fast-growing wood plantations that could replace floodplains as a source of wood. Furthermore, they also plan on using modern technology for generating renewable energy and introducing efficient energy use. In doing so, they place great importance on remaining in close dialog with the population in order to be able to draw on already existing regional knowledge from the very start and to be able to communicate project results. They also want to maintain close collaboration with local decision-makers and also take into account existing regional projects initiated by Kyrgyz authorities for the protection of floodplains and efficient energy use in the villages. In addition, a team of young researchers intends to use modern methods of environmental analysis to promote long-term monitoring of floodplain development along the Naryn.

The KU team of researchers will focus on analyzing natural floodplain ecosystems in order to draw conclusions on their state and be able to make predictions on possible developments. To this end, they will use field recordings and modern methods of remote sensing and geoinformatics to gather information on a large territory. A first field campaign will already start in September. In November this year, Dr. Nadira Degembaeva will spend a research stay at the KU as visiting scholar to investigate research questions in connection with the Naryn floodplains.

List of participating institutions in the “ÖkoFlussPlan” project:

From Germany:

- Catholic University of Eichstätt-Ingolstadt (Applied Physical Geography/Floodplain Institute Neuburg)
- Technische Hochschule Ingolstadt (Institute of new Energy Systems)
- Technical University of Munich (Chair of Hydrology and River Basin Management)
- Eberswalde University for Sustainable Development (Socioeconomics & Communication)
- ÖKON Gesellschaft für Landschaftsökologie, Gewässerbiologie und Umweltplanung mbH, Kalmünz
- CitrinSolar GmbH Energie- und Umwelttechnik, Moosburg
- Water Resources Authority Ingolstadt
- scilands GmbH – Gesellschaft zur Bearbeitung digitaler Landschaften, Göttingen

From Kyrgyzstan

- Eco-Consult
- Naryn State University
- Kyrgyz State University for Construction, Transport and Architecture
- World Agroforestry Centre, branch office Bishkek
- Agency for municipal development and investments
- Forest administrations Naryn and Aktalaa
- Municipalities Aktal and Emgek-Talaa
- Kyrgyz Soil Science Society

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