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Water-related synergists and antagonists in the SDGnexus Network

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Funded by the German Academic Exchange Service (DAAD) as a Higher Education Excellence in Development Cooperation (exceed), the SDG[nexus] Network is a global community of universities, research centers and stakeholders committed to promoting the Agenda 2030 for sustainable development. Supported for five years starting in 2020, the network will establish a common research framework related to the inter-linkages, trade-offs, and synergies between the Sustainable Development Goals (SDGs). As part of this endeavor, we will focus on water-related SDGs and how they interact, support, and counteract with other SDGs. We will particularly investigate the interaction between SDGs related to land use, food provision, and energy production.

Consisting of seven university core partners with four of them in Latin America (two each in Ecuador and Columbia) and three in Central Asia (Uzbekistan, Tajikistan, and Kyrgyzstan), the network liaise research between countries with typical development challenges such as the resource curse or the middle-income trap.

Both regions have water, energy, and food interrelated concerns. Hydropower generation upstream can have, for example, adverse effects on the agricultural water use downstream. The timing of water use throughout the year is a potential conflict in Central Asia, such as in the Syr Darja and Amur Darja basins that discharge into the Aral Sea. The energy demand in winter contradicts the agricultural crop water requirement in summer. In the Amazon basin deforestation likely changes the large-scale water cycle and, therefore, the local to regional the rainfall patterns through a modified moisture recycling. Such changes could result in less rainfall on the eastern side of the Andes and consequently diminishes discharge into the Amazon basin from the Andean headwaters.

Climate change will further increase the pressure on water resources. The glacier-fed headwaters in the Tian Shan mountain in Asia and the Andes systems are suspected of undergoing dramatic changes in the near future. While an increased runoff in summer due to the rapid melting of the glaciers is expected initially, runoff will decrease due to the loss of the glacier as an intermediate water reservoir in the long term.

Overall, the SDG[nexus] network will build bridges between water-related science, education, as well

as development. It supports the identification of potential areas of intervention for decisionmakers, and reduce the research gap in inter-linkages between SDG goals and targets. Furthermore, the network aims at developing alternative land use options under climate change conditions to sustain environmental flows in both world regions.