ICIMOD HUC Himalayan University Consortium

HUC ONLINE COURSE SERIES

# Water–energy–food nexus

## Adaptive response to regional Hindu Kush Himalayan challenges

19 May–4 June 2020

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## Course summary

This online course provides participants with conceptual understanding and applied knowledge on water, energy, and food systems, with an emphasis on development in the Hindu Kush Himalaya. Drawing on the experience of the instructor Prof. Christopher Scott (University of Arizona, USA; and ICIMOD Mountain Chair 2020–22) and globally recognized experts, the interactive course will showcase new insights on the water–energy–food nexus. In the context of global change (including climate change; rapid urbanization; and changes in global markets for energy, biofuels, and food), research and decision making on the nexus increasingly focus on the following:

- Mutual influences among energy, agricultural, and water policy and planning
- Policy formulation (with emphasis on global change adaptation involving water, energy, and food that does not undermine long-term mitigation)

The seminar will address the following list of topics:

- Energy futures to meet agricultural and urban water demand
- Water resource needs for power generation using conventional fuels and renewables
- Implications and role of water and agriculture in the emerging carbon-neutral economy
- Comparative energy- and water-based perspectives on efficiency and conservation, and co-production of research and policy making on water, energy, and food

While the primary focus is on the applied assessment of the drivers and potential solutions to challenges encountered in resource management in mountain development, the theoretical underpinnings are strongly informed by coupled natural and human systems, resilience theory, ecohydrology, and stakeholder-based policy analysis. As a result, seminar participants will learn about physical and social science approaches to water management and policy.

## Programme details

The course aims at faculty members and graduate students, mid-career professionals in public and private sectors in the areas water, irrigation, energy, electricity, food and agriculture.

The following is a list of provisional topics and speakers. All sessions will be held on Tuesdays or Thursdays at 10:00–11:00 am Nepal Standard Time (UTC+05:45).

| Date | Programme |
|---|---|
| **19 May 2020**<br>10:00–11:00 | **Welcome, course overview, water–energy–food nexus concept and applications**<br>Christopher Scott, University of Arizona, USA<br><br>**Water–energy–food nexus in the Hindu Kush Himalaya**<br>Golam Rasul, ICIMOD, Nepal |
| **21 May 2020**<br>10:00–11:00 | **Managing groundwater in the Gangetic Plains requires a water–energy–food nexus approach**<br>Aditi Mukherji, IWMI, India<br><br>Feedback, Q&A with participants; identification of water–energy–food nexus cases |
| **26 May 2020**<br>10:00–11:00 | **Water–energy–food nexus in Africa**<br>Michael Jacobson, Pennsylvania State University, USA<br><br>**River basin development in the Andes**<br>Christopher Scott, University of Arizona, USA |
| **28 May 2020**<br>10:00–11:00 | **Water–energy–food nexus in Pakistan**<br>Afreen Siddiqi, Massachusetts Institute of Technology, USA<br><br>**The water-energy-food nexus: A systematic review of methods for nexus assessment**<br>Arica Crootof, Montana Western Univ., USA; and<br>Tamee Albrecht, Univ. Arizona, USA |
| **2 June 2020**<br>10:00–11:00 | **Hydro-energy cooperation in the Bangladesh–Bhutan–India–Nepal region: Prospects for transboundary energy and water security in South Asia**<br>Padmendra Shrestha, University of Arizona, USA, and<br>Udisha Saklani, University of Cambridge, UK<br><br>**Regional connectivity and cross-border energy trade in the BBIN region: Implications for sustainable mountain development**<br>Ramesh Vaidya, ICIMOD, Nepal |
| **4 June 2020**<br>10:00–11:00 | **Water-energy-food nexus and the Hindu Kush – Himalaya Monitoring and Assessment Programme**<br>Philippus Wester, ICIMOD, Nepal<br><br>**Course synthesis and closing remarks**<br>Christopher Scott, University of Arizona, USA |

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**For registration queries** huc@icimod.org

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