

# New study on water resources in Himalaya

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A new study featuring contributions from British Antarctic Survey (BAS) scientists has identified 100 pressing research questions on climate change and water resources in the Upper Indus Basin (UIB) that must be answered to protect the communities that live there.

The UIB is a mountainous region in the Himalayas which feeds the river systems that supplies the world's largest network of irrigated agriculture. Hundreds of millions of people across Pakistan, India, China, and Afghanistan depend on these [water resources](#) and so adapting to climate change is essential.

BAS scientists have unique expertise in glaciology and airborne radar techniques which is applicable to research in Antarctica and mountainous regions the world over and the Himalayas is the focus of ongoing BAS research.

Now, a new study—published in the journal *Earth's Future*—has employed a "horizon scanning" technique to identify 100 essential questions required for successful adaptation to ongoing and future climate change in the UIB. The aim of the study is to identify knowledge gaps and opportunities in social and natural sciences to help inform climate plans, [water management](#), and development policy.

The questions identified push the boundaries of current thinking and are grouped into overarching topics of governance and policy, socioeconomic processes, and earth system processes. Examples of the pressing questions that the study poses include:

- How do international tensions and conflicts affect the feasibility of climate change adaptation strategies in the UIB?
- How will socioeconomic well-being and resource demands in rural and urban areas of the UIB be affected by hydroclimatic changes?
- How are hydroclimatic extremes (floods and droughts) expected to change over the UIB in the future?

By raising awareness of these pressing knowledge gaps researchers, funding bodies, practitioners, and policy makers may be able to address

them.

BAS Climate Scientist, Dr. Andrew Orr who led the study, says:

"Water resources in the UIB are under a range of ever-increasing pressures including [population growth](#), industrialization and of course the serious threat posed by climate change. If we are going to successfully adapt to ongoing and future hydrological and [climate change](#) in this region we must address pressing [knowledge gaps](#) in social and [natural sciences](#). The coming years will likely see dramatic changes to this area, and the questions we have identified must be addressed if we are to be prepared."

The study demonstrates the exciting potential for the [international community](#) to develop water management, climate plans, and policies which will secure and protect the UIB for generations to come.

Knowledge Priorities on Climate Change and Water in the Upper Indus Basin: A Horizon Scanning Exercise to Identify the Top 100 Research Questions in Social and Natural Sciences, by Orr, A., et al is published in the journal *Earth's Future*.

**More information:** Andrew Orr et al, Knowledge Priorities on Climate Change and Water in the Upper Indus Basin: A Horizon Scanning Exercise to Identify the Top 100 Research Questions in Social and Natural Sciences, *Earth's Future* (2022). [DOI: 10.1029/2021EF002619](#)

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