Summit-to-Surf

An international collaboration funded by the Worldwide Universities Network to study climatic impacts on South Asian glaciers, rivers, and downstream ecosystems.

Ensuring the quality and quantity of global freshwater resources presents the most significant scientific, political, and social challenge faced by our generation.

A fifth of the World's population use water sourced from Himalayan mountains for irrrigation, hydroelectric power generation, and simple human subsistence. However, meteorological and hydrological aspects of Himalayan glaciers and snowfields have proven difficult to assess and are still not fully understood. Downstream impacts are also hard to gauge, but changes in water supply are likely to dramatically alter the ecology of riverine and oceanic ecosystems and their ability to support the needs of substantial human populations.

Remote sensing, geospatial technologies, and numerical modelling are required for large area assessment, disaster mitigation, and resource planning. Our project will improve understanding of future long-term and seasonal changes in water storage and output and supply of alpine glaciers and snowfields.

Targets for policy makers will include: management policy options to be developed around altered runoff amounts and pathways; migration, population resilience, and health in the face of changing water abundance; intersection of nutrition, food security and food systems; and mountain hazard assessment and disaster mitigation.

This project is being led by Andy Bush at the University of Alberta (abush@alberta.ca).

http://wun.ac.uk/wun/research/view/himalayan-climate-change