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High Altitude and Latitude Hydrology: A Proposed New Initiative by GEWEX and CliC

P.J. van Oevelen (1), T. Prowse (2)

(1) International GEWEX Project Office, Silver Spring, MD, USA (gewex@gewex.org), (2) University of Victoria, Victoria, BC, Canada.

Within Earth Sciences many of the hydrological disciplines are disperse when dealing with cold climates/regions of the world. The links between cold region hydrology and the ones for temperate or tropical climate zones are weak or even lacking. Geographically, the links are missing between studies of high latitude /cold region hydrology and high altitude/mountain hydrology. To understand global (climate) changes and its effect on water resources this gap needs to be bridged. Most of our fresh water resources originate in mountainous regions and/or cold regions. Changes in these environments lead to hydrological implications for water resources management which are currently poorly understood and not very predictable on any time and spatial scale. This gap is recognised within international science programmes such as the Global Energy and Water Cycle Experiment (GEWEX), and the Climate and Cryosphere Project (CliC), both part of the World Climate Research Programme (WCRP). A new initiative, High Altitude - Latitude Hydrology will bring together, different disciplines, various research communities and individual scientists to help bridge this gap. This should lead to more visibility of critical issues with funding agencies and is expected to result in an increase in expertise, knowledge and increased technological and experimental capability. Many aspects of global and climate change are very prominent at high altitudes and latitudes and therefore changes in regions such as the Tibetan Plateau will effect millions of people both directly and indirectly. Changes in temperature and precipitation for example will result in shifting ecosystems which has positive and negative effects. Many other cause and effects can be illustrated.