DEGLACIATION: A NATIONAL PERSPECTIVE
Tropical Andean glaciers

- The Andes are home of 99% of the world’s tropical glaciers.
- The largest fraction, 71%, is located in Peru.
- Peru’s glaciers are concentrated mainly in the Cordillera Blanca.
- Glacial runoff provides water for drinking, agriculture, hydroelectricity and industry.

Source: MINAM
Importance of Peruvian glaciers

- Source of water for the Andes during dry season.
- Source of water for the coast, characterized by a desert climate and low rainfall.
- Source of energy provided from hydroelectric power reliant on glacial runoff water.

Fuente: COES. Elaboración: GPAE - Osinergmin.
Current state of Peruvian glaciers

Glacier Broggi – CORDILLERA BLANCA - 4860 m.s.n.m. [1932 -2003]

Glacier Yanamarey – CORDILLERA BLANCA - 4890 m.s.n.m. [1982 -2005]

Source: Rabatel et al. 2013

Source: INRENA
Relationship with natural hazards

• Large detached sections of glaciers can cause huge avalanches:
  ➢ In 1970, after a massive earthquake, an avalanche killed thousands.

• Glacial lakes during the melt season can overflow and cause floods.
  ➢ Between 1941 and 1950, three floods killed about 6000 people.
Glacier melt and water security

- Exposure of heavy metals increases their concentration in the meltwater.
- Current research focuses on the use of essential wetlands that retain heavy metals as part of the natural hydrologic system.
- Contribution of glaciers to river flow will diminish as they shrink, affecting human populations and economic activities.

Source: Gratham Institute, Imperial College London
Future challenges

- Water availability and conflicts over water usage (energy, drinking water, agriculture, mining).
- Adaptation and mitigation measures with scientific evidence.
- Changes and resilience of the ecosystems associated to glaciers.

Source: Proyecto Chavimochic. Exitosa
Thank you