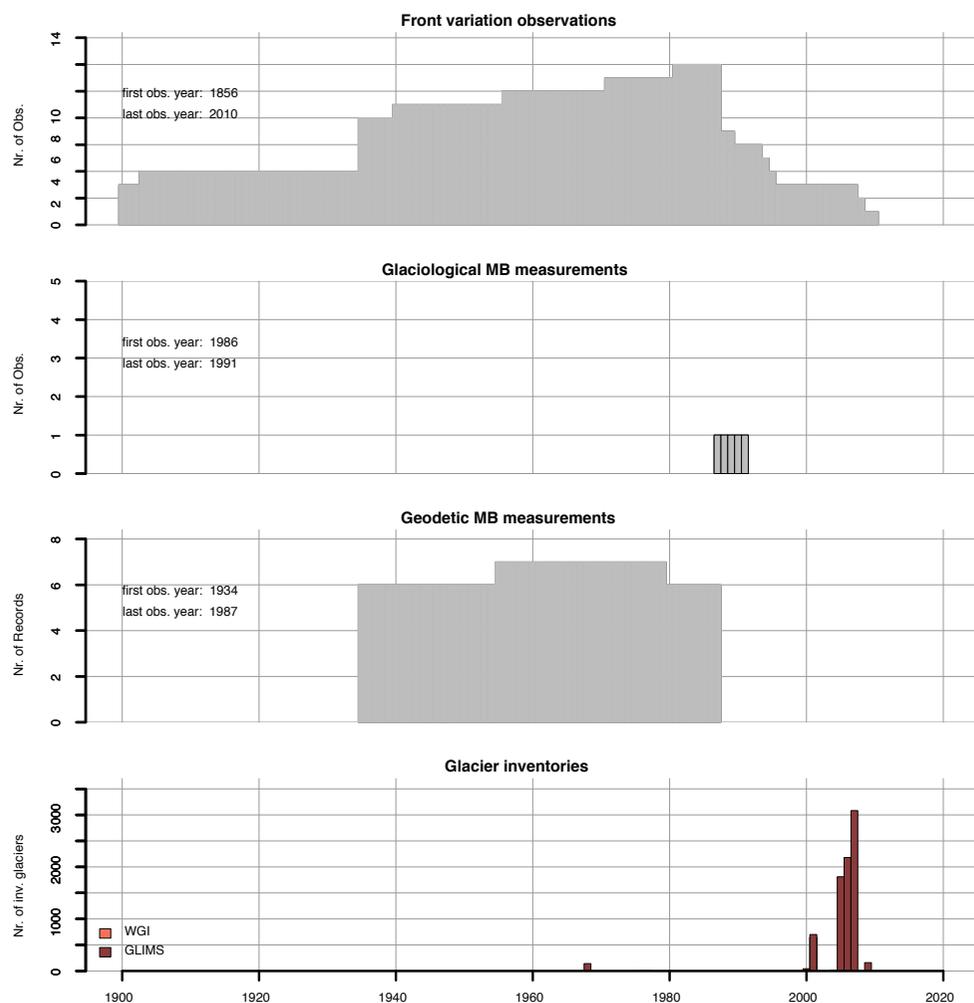


GLACIER MONITORING: PAKISTAN

Glaciers in Pakistan have a significant role in local and regional water resources, natural hazards, and geopolitical stability (Bishop et al. 2014). The country lack fundamental and reliable quantitative information on glacier changes.

Available series



In Pakistan, a few front variation series are available, especially covering the 20th century. Only one short mass balance series is available from the 1980s and geodetic mass balance measurements exist for a few glaciers between 1934 and 1987. The inventories (especially GLIMS) cover large parts of the glaciated area.

Key statistics

	Front Variation	Mass Balance	Thickness Change
total glaciated area:	15'918 km ²	12	7
total coverage WGI:	62 %	31	26
total coverage GLIMS:	80 %	3	2
Number of series:		1	1
Average length [years]:		4	4
Average number of observations:		5	2

Present state

National correspondent available but no current glacier monitoring activities.

No long-term and detailed monitoring program.

Few balance observations available from Siachen glacier.

About a dozen front variation and few geodetic observations available.

Partial coverage in WGI and GLIMS databases.

Future potential/needs

Start glacier monitoring and coordinate with glaciologists from neighbouring countries.

Initiate glaciological mass balance measurements.

Initiate glaciological mass balance measurements.

Encourage the use of remotes sensing data for assessing glacier changes in length and volume.

Complete glacier inventories. Plan next repeat inventory towards 2020.

Spatial distribution of series

Glaciers in Pakistan are concentrated in the North of the country, in the Hindu Kush and Karakoram mountains, and cover an area of about 16000 km². Pakistan exhibits some of the world's longest mid-latitude glaciers in the higher altitude ranges due to snow accumulation from both winter westerlies and the summer monsoon, e.g. Baltoro glacier, around 60 km long.



References:
Bishop et al. (2014): Remote sensing of glaciers in Afghanistan and Pakistan. In: Kargel et al. (2014): Global Land Ice Measurements from Space. Springer.