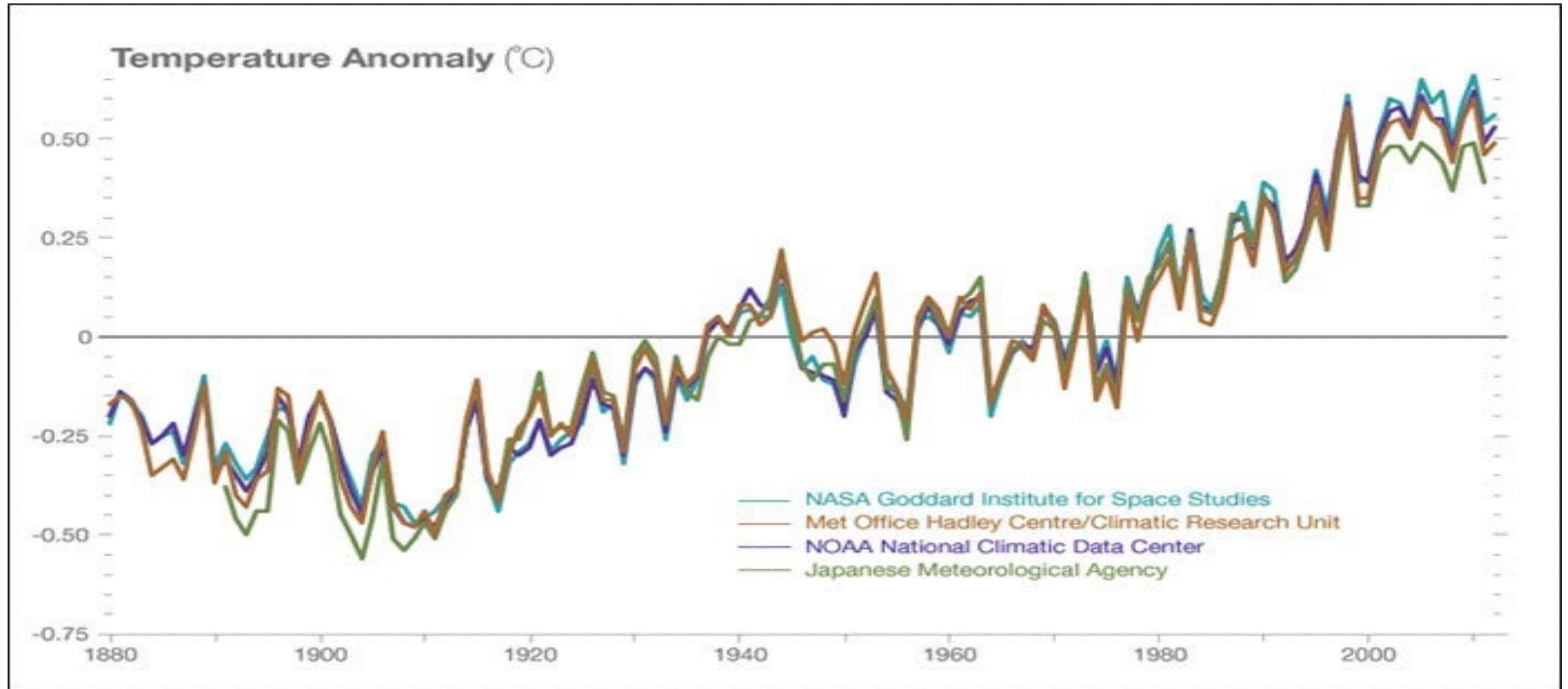


NASA Space Apps Challenge 2016 DataBootcamp

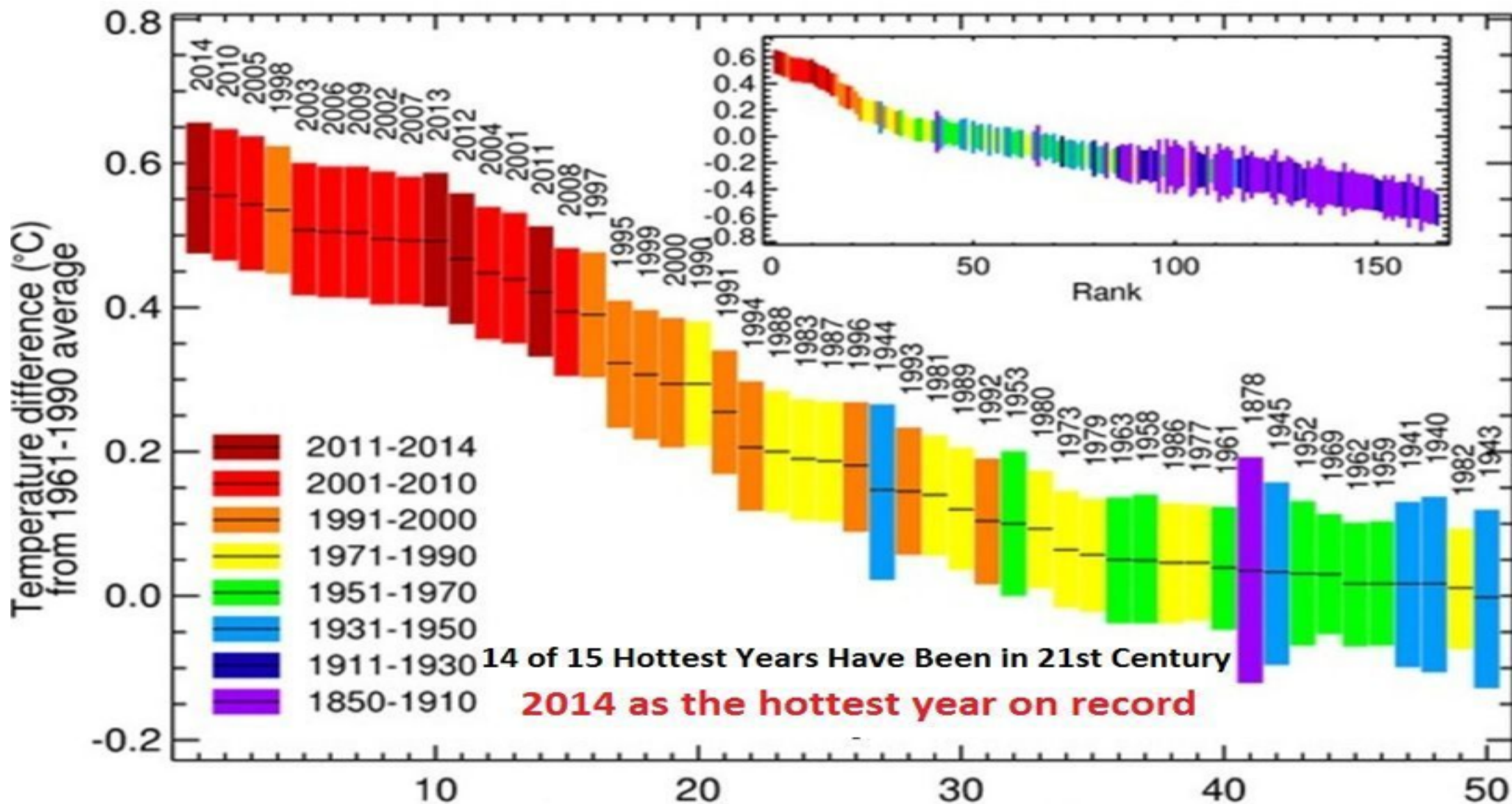
OUR EARTH IS CHANGING, WE ARE ON IT

- Our Actions make the Nature Changes
-

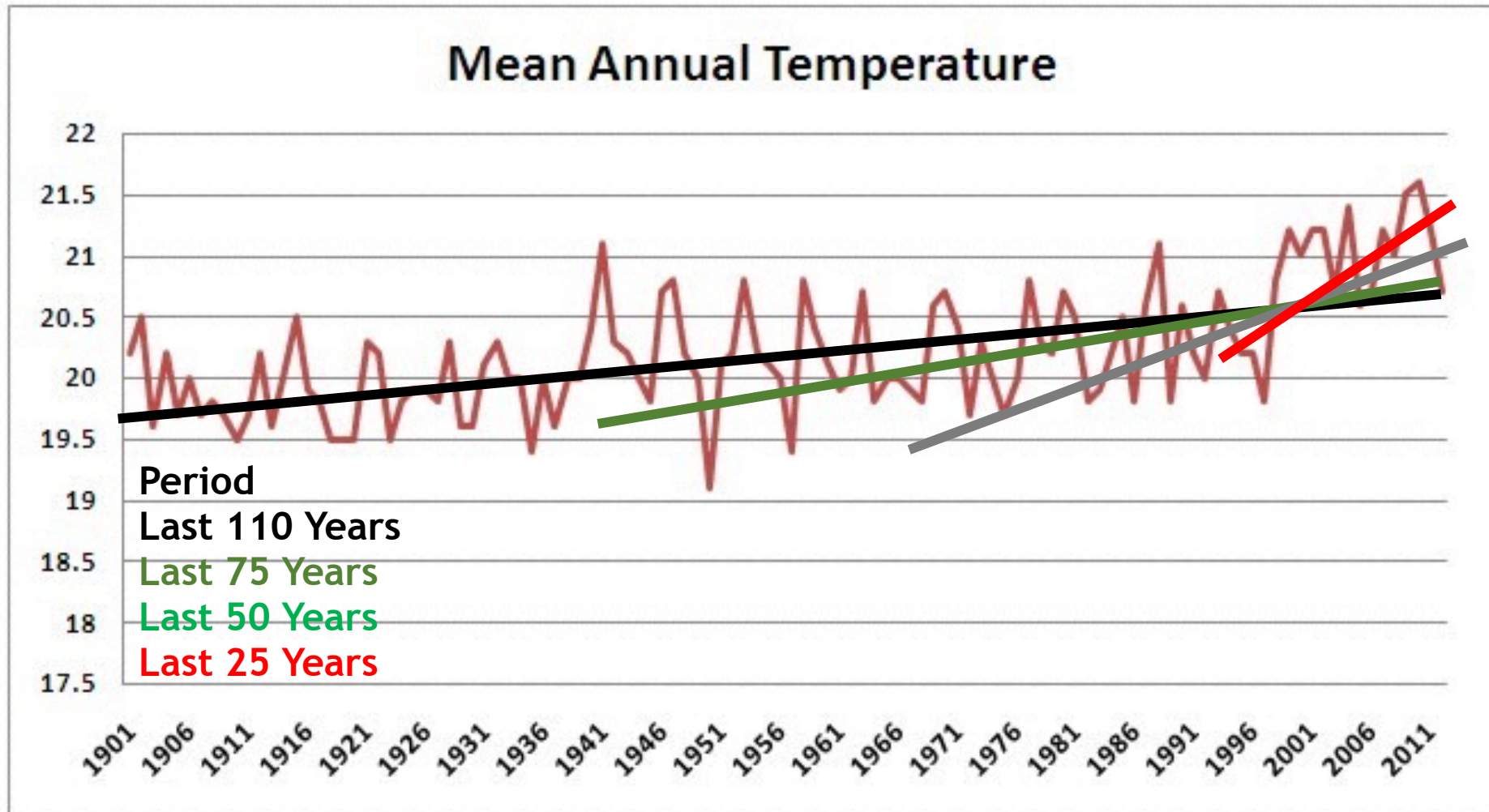
Earth is Changing



WMO statement on the status of the global climate



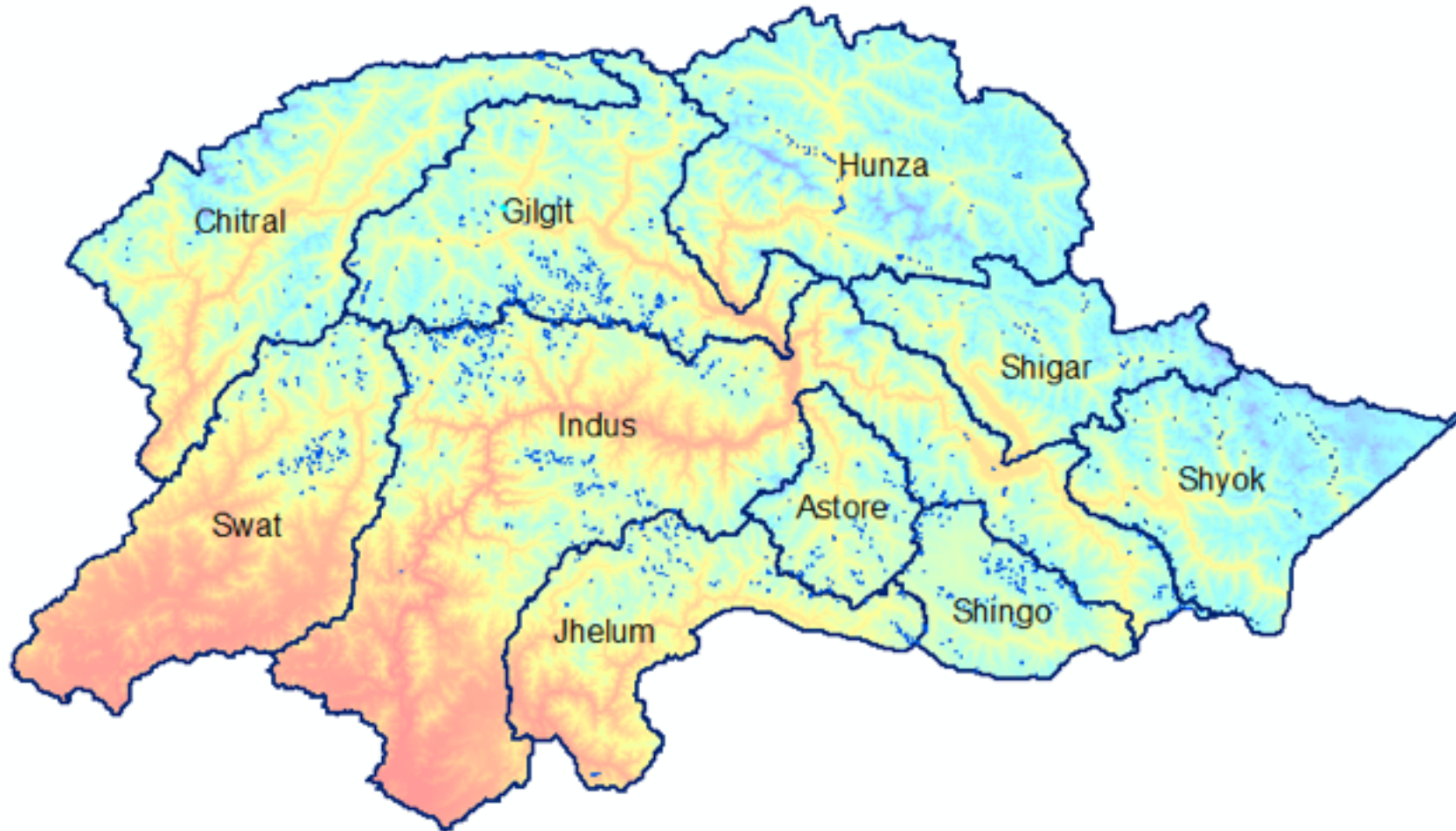
Area Weighted Mean Temperature Anomaly of Pakistan



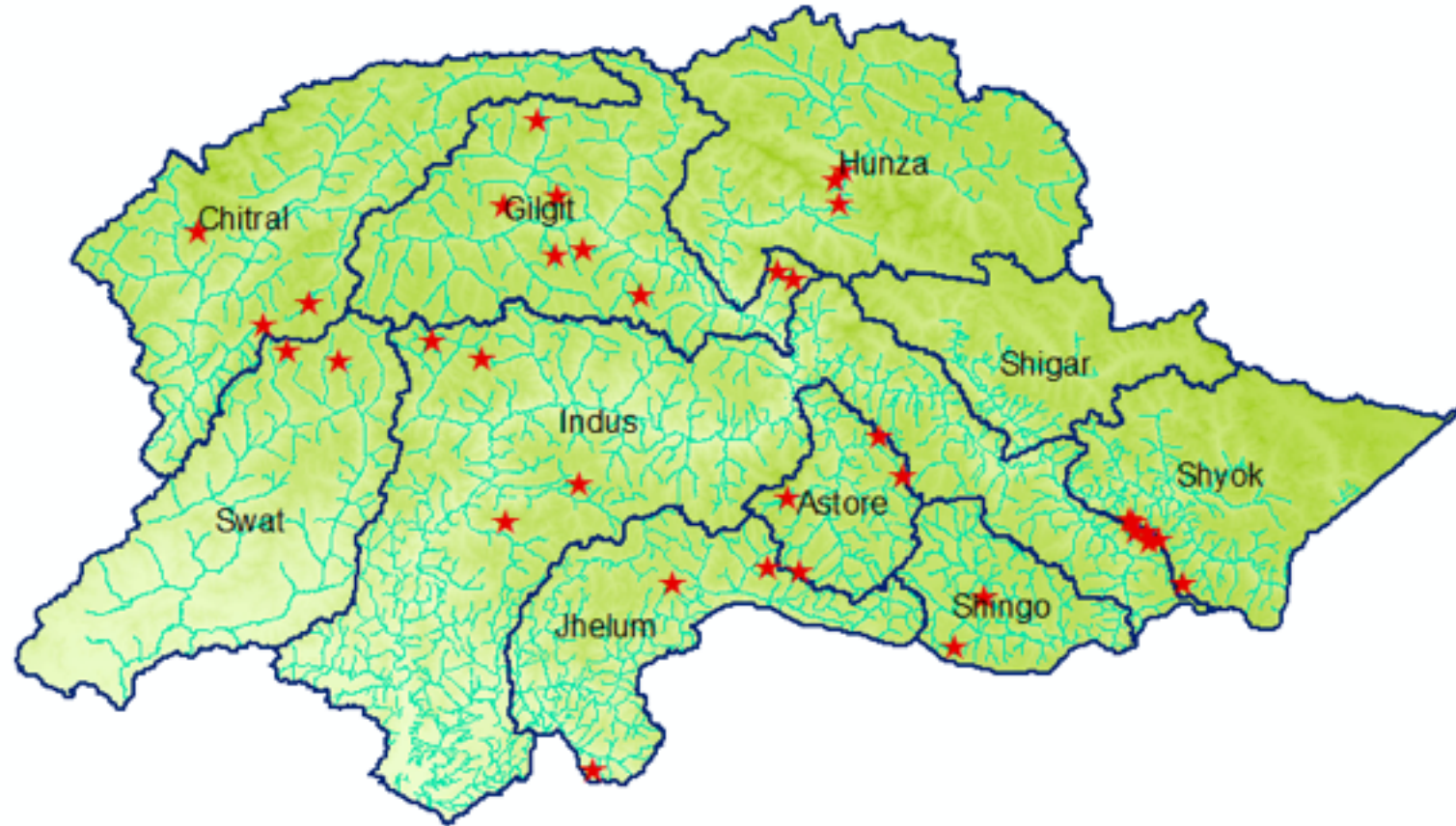
IDEAS

- Application of inventory of Expectedly Dangerous Lakes
 - Challenge Category : Sea Ice App
 - Natural disasters are rapidly altering the face of our planet
 - Outburst : Floods in northern areas of Pakistan

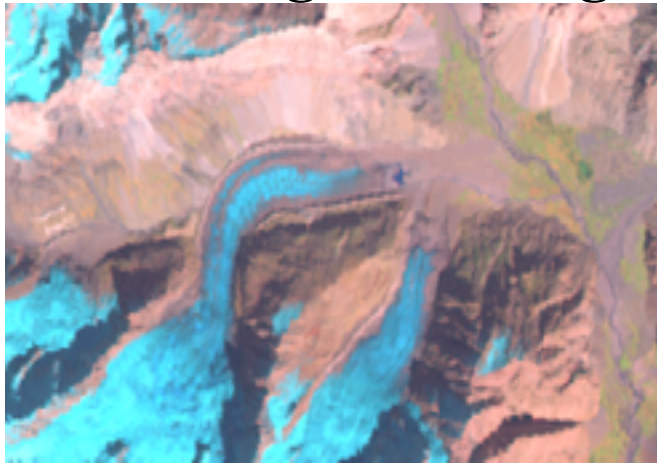
Distribution of Glacial Lakes (2013)



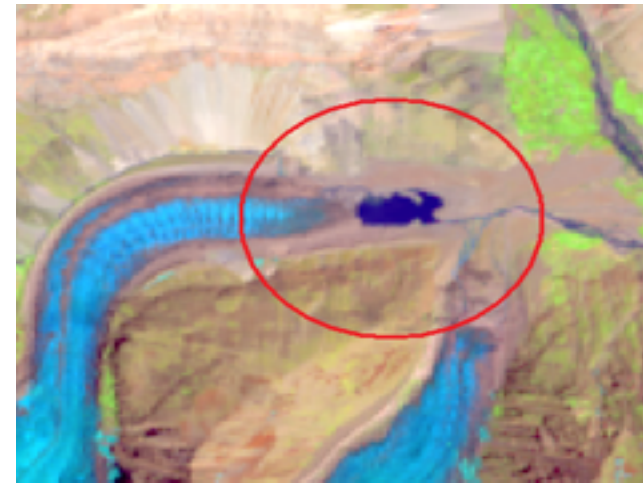
Distribution of Potentially Dangerous Lakes



Images showing Increase in Glacier Lake volume

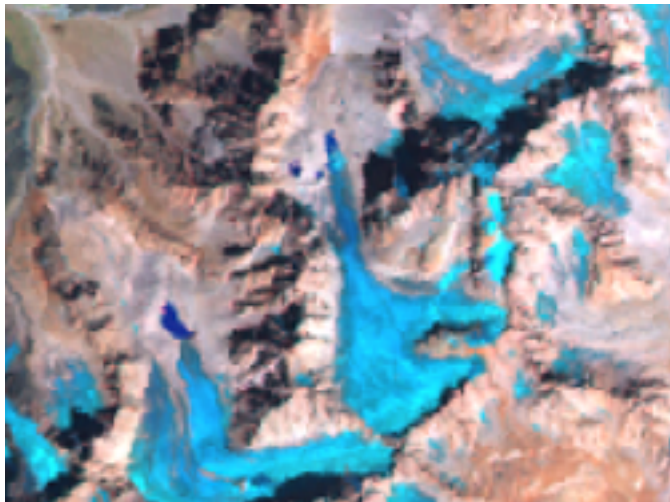


2001

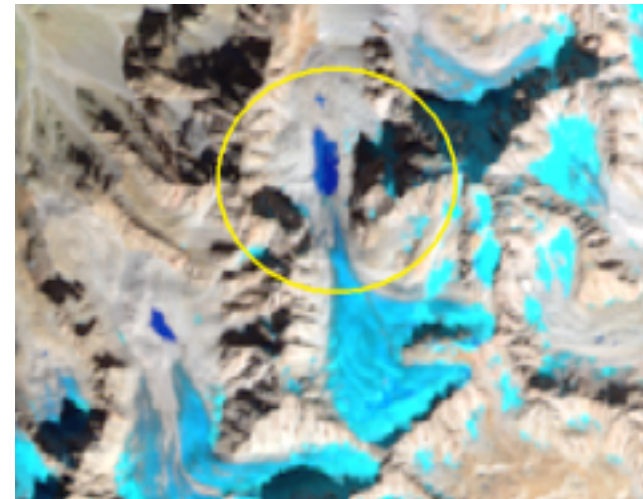


2013

Darkot Lake, Gilgit (Gil_gl 612) growing rapidly near large glacier



2001



2013

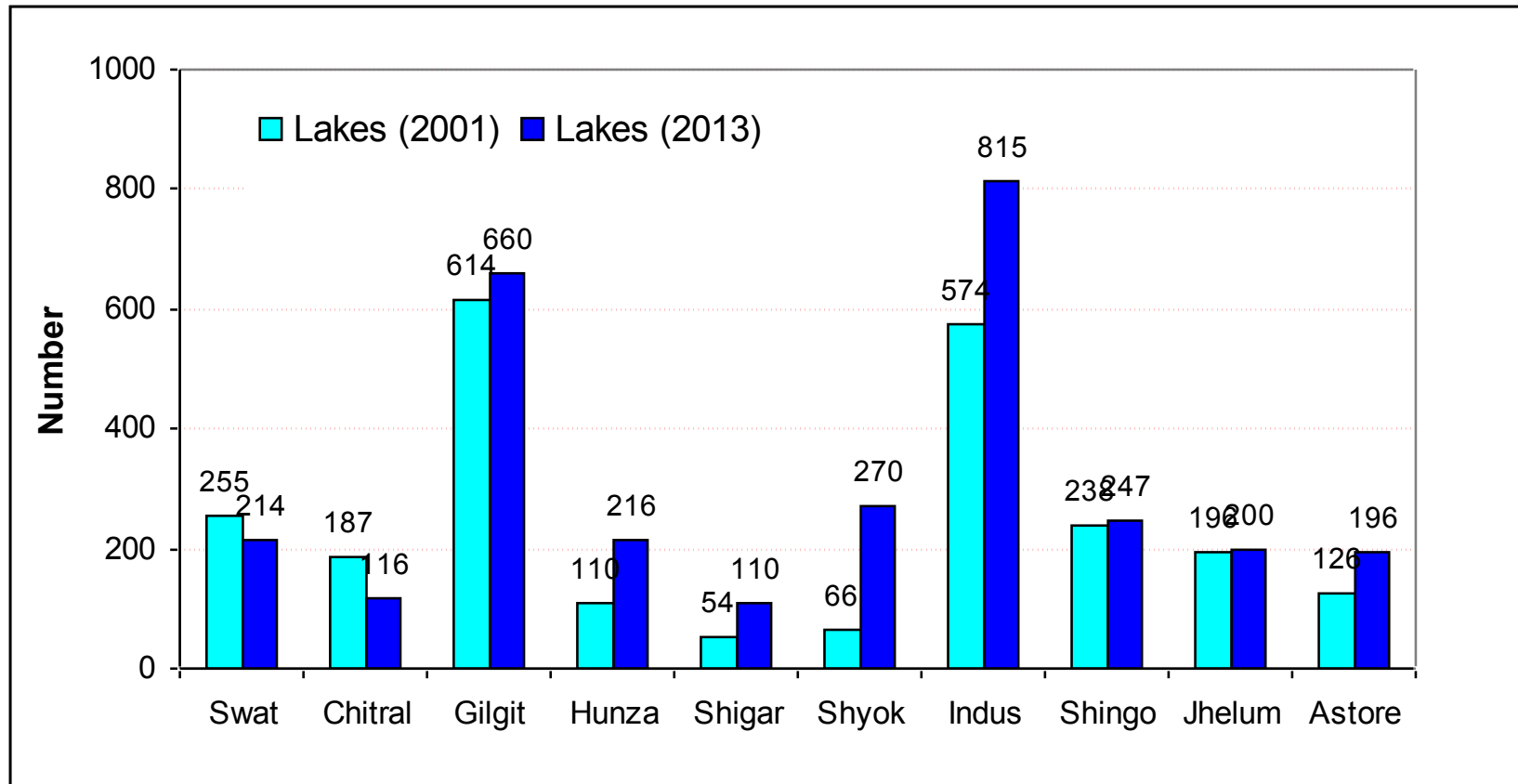
Chi_gl 26 growing rapidly due to glacier melting

Recent Glacier Dynamics

- It has been observed during visit in September 2014 that the lake at Gargo Glacier has been drained out gradually.

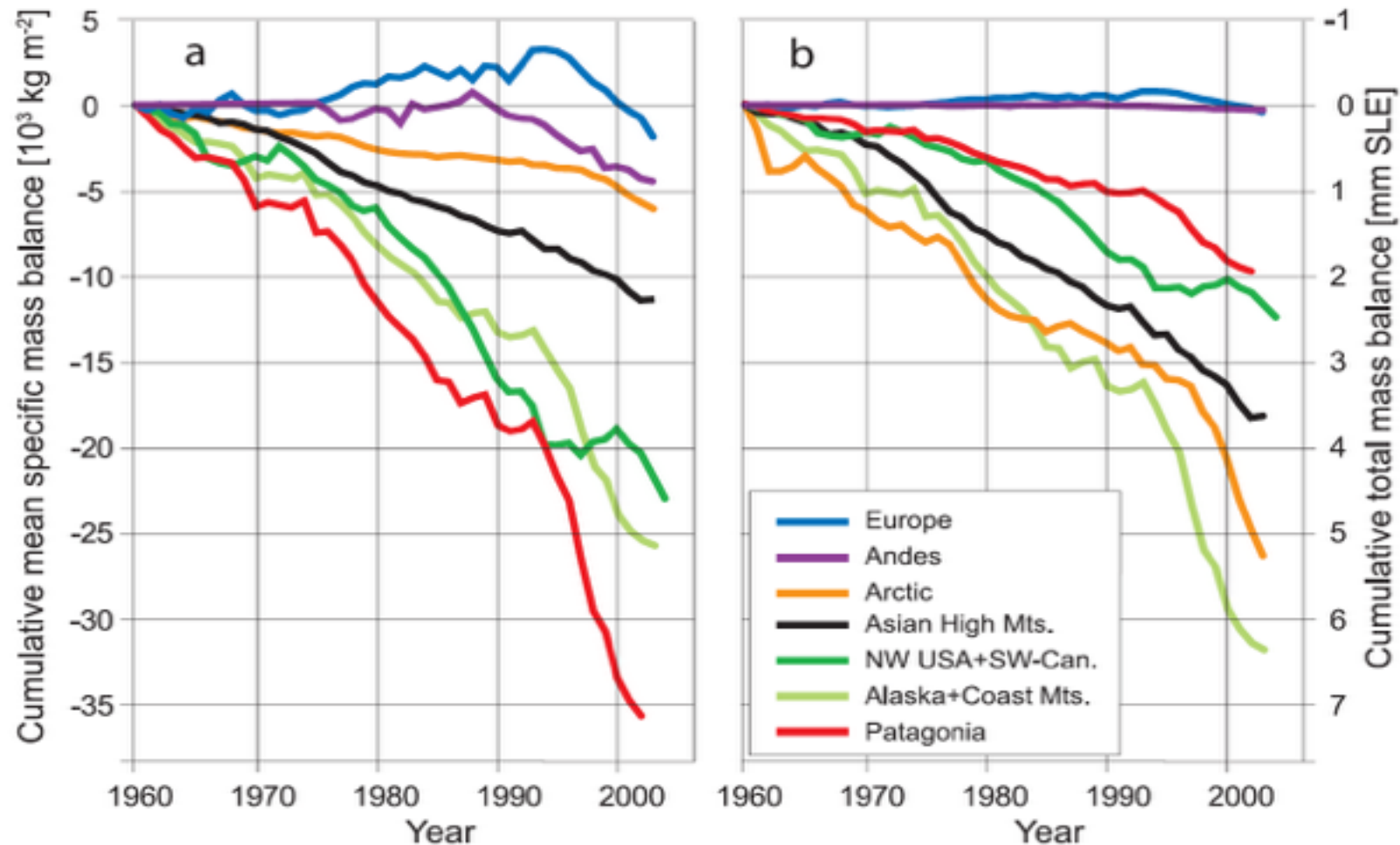


Comparison of 2001 and 2013 lakes



Possible reasons of increase in lakes number are higher precipitation, rapid melting of source glaciers due to warming besides better quality of the image data used.

Response of Glaciers to Climate Change

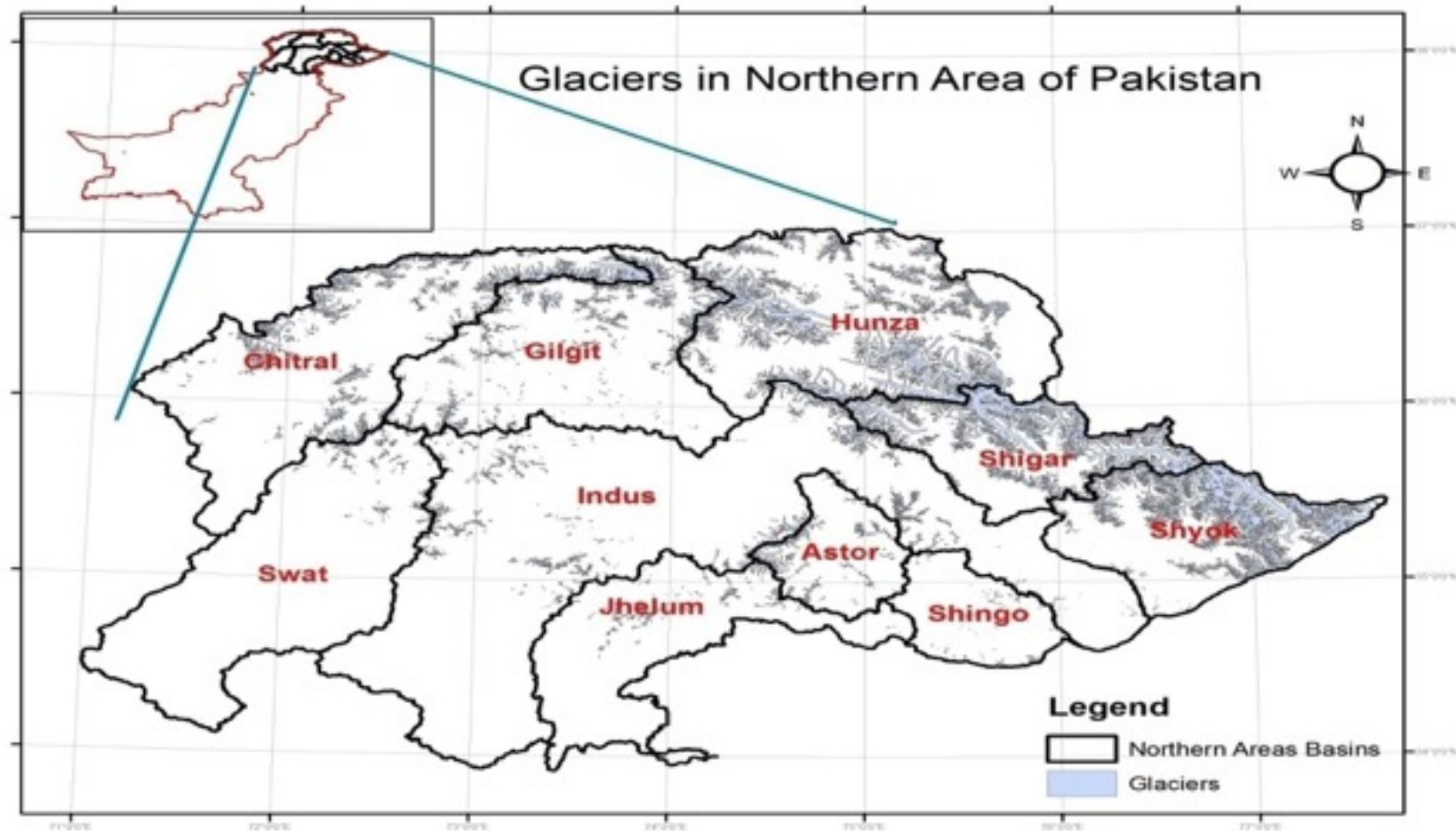


Application of Glacier Inventory

- Challenge Category : GEO Tagging
 - Glacier melting indicator of Climate Change.
 - Detail information of Glaciers.
 - Observations / Information from local community.

Pakistan's Cryospheric Assets

Number of Glaciers	Area of Glaciers (km2)	Volume of Ice (km3)	Ranges
7259	11780	2066	Himalaya Karakoram Hindukush



Application for Weather Forecast

- Challenge Category : Earth Live
- Custom Notification for Weather Forecasting
- Weather API's
 - **National Oceanic and Atmospheric Administration (NOAA)**
 - AccuWeather
 - Forecast.io
 - AerisWeather
 - YahooWeather

Crowd Sourcing App for Environmental Hazard from Local Communities

- Challenge Category : Air Check

DATA RESOURCES

- <http://climate.nasa.gov/>
- Global ICE Viewer: <http://climate.nasa.gov/interactives/global-ice-viewer/>
- NASA Global Imagery Browse Services (GIBS): <https://earthdata.nasa.gov/about/science-system-description/eosdis-components/global-imagery-browse-services-gibs>
- EARTHDATA: <https://earthdata.nasa.gov/>
- OpenWeatherMap: <http://openweathermap.org/stations>
- ArcGIS Online: <http://www.esri.com/software/arcgis/arcgisonline>
- Global Precipitation Measurement data: <http://pmm.nasa.gov/data-access/downloads/gpm>
- National Snow and Ice Data Center (NSIDC): <http://nsidc.org/>

- THANKS