

## Snow Cover Mapping and Assessment of Nepal

FOR MOUNTAINS AND PEOPLE

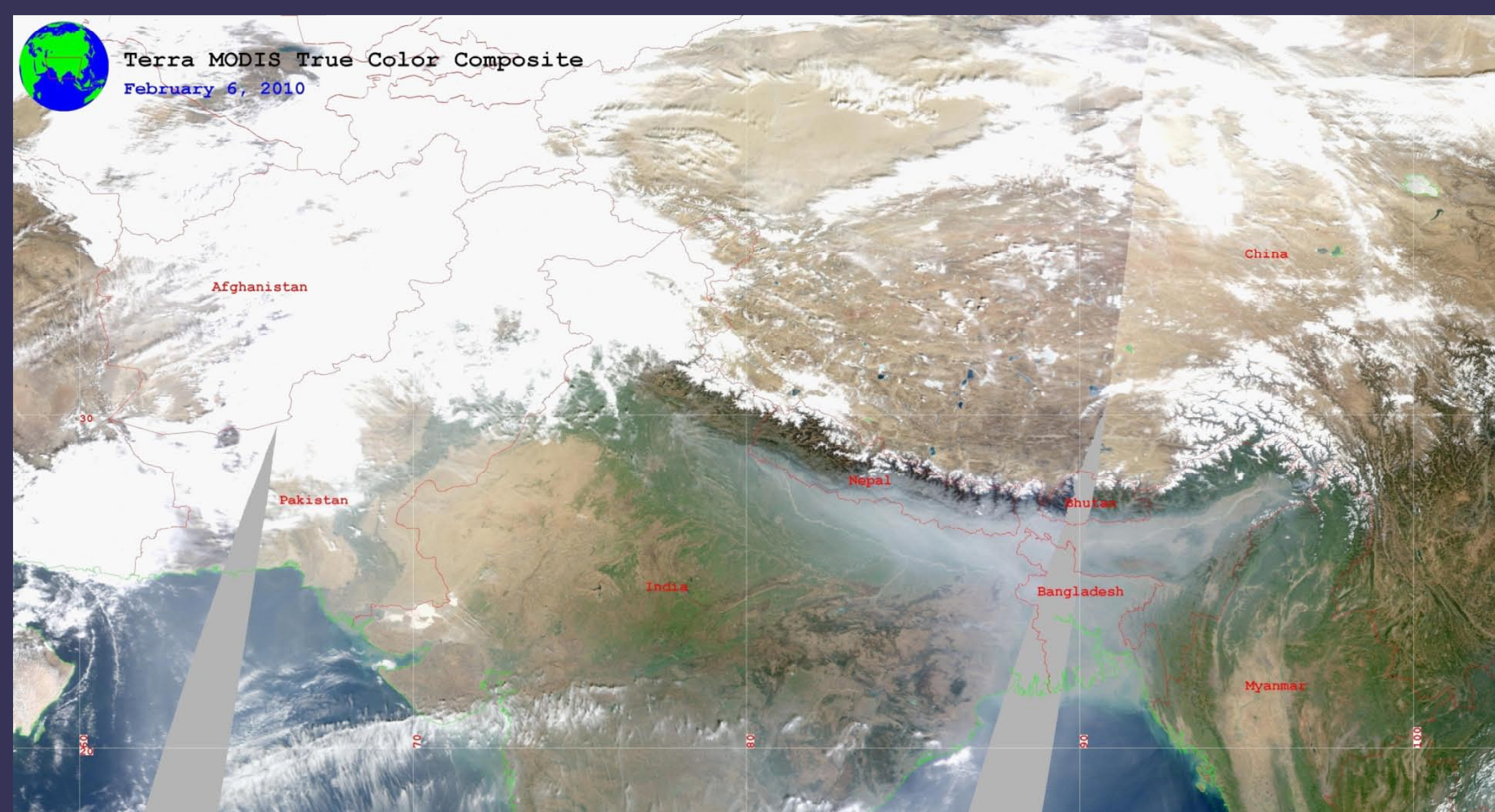
### Cryosphere

The term "cryosphere" stands for water in the solid form and include snow, glacier and permafrost. Regular monitoring and assesment of cryosphere is key towards understanding impacts of climate change on water resources.



### MODIS

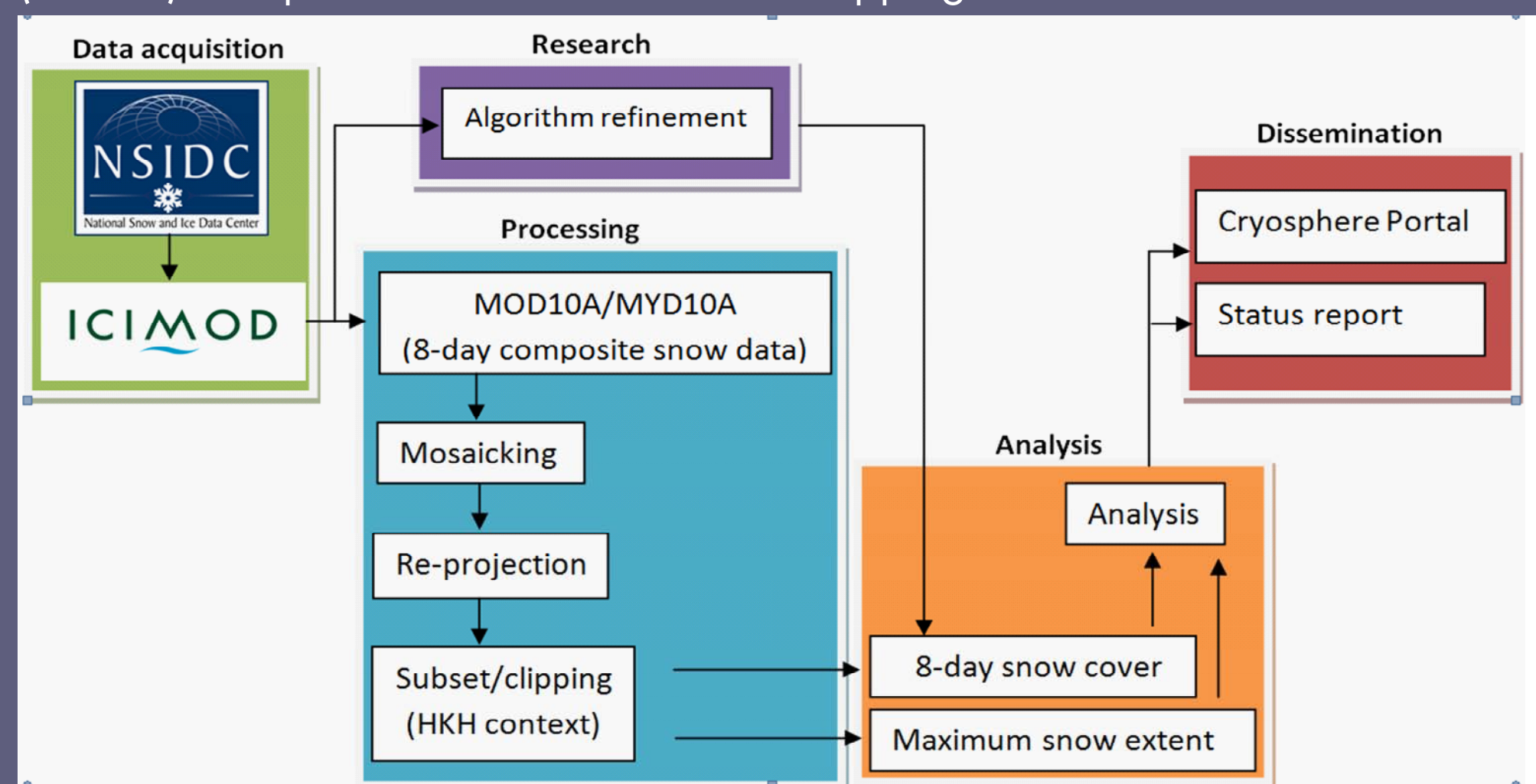
The Moderate Resolution Imaging Spectroradiometer (MODIS) since 2001 has mapped and provided global snow cover database at very high temporal frequency (1 day and 8-days) with spatial resolution of 500m.



Mosaic MODIS Terra scene of Feb 6, 2010 covering HKH region.

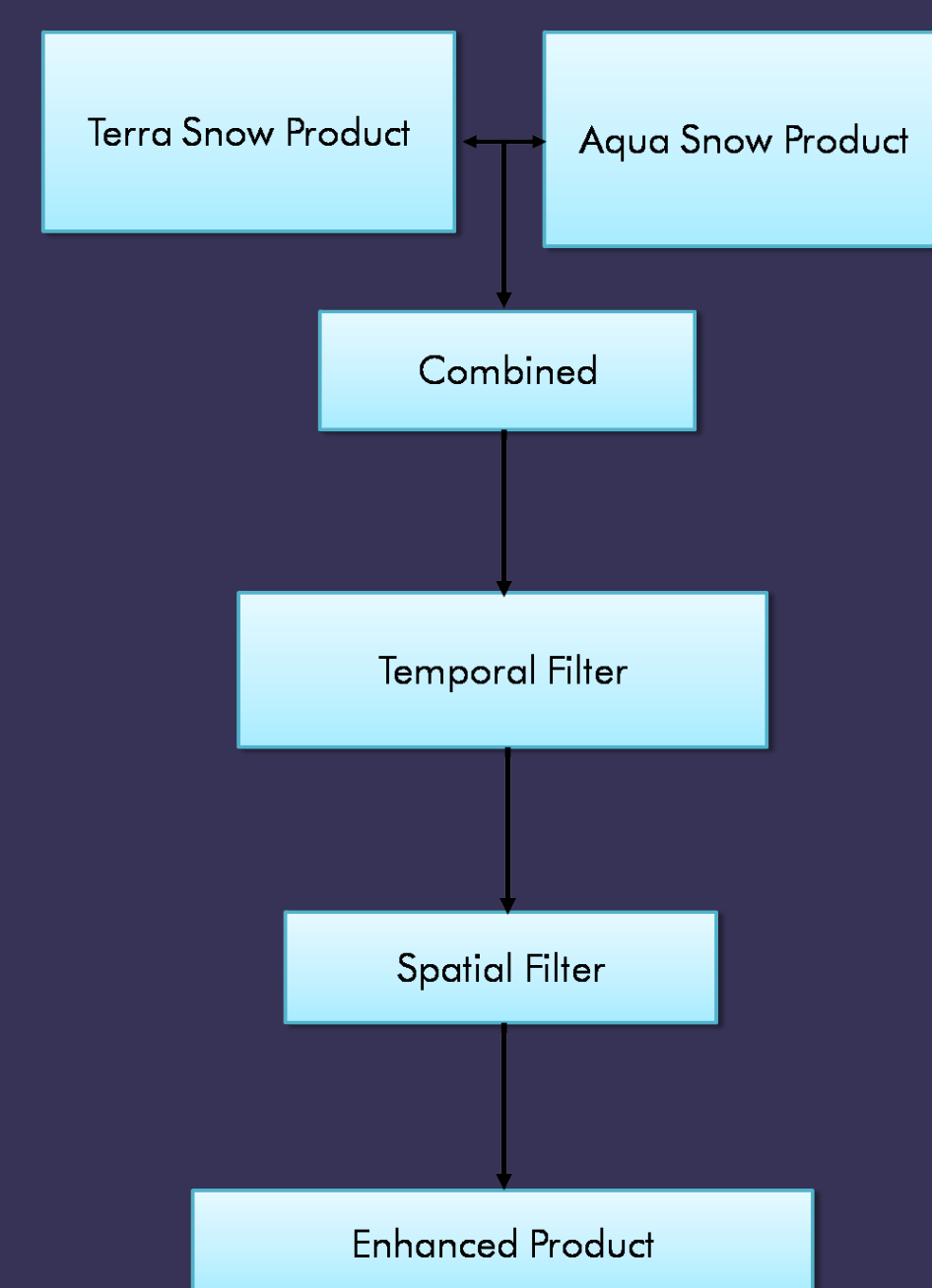
### Framework for snow cover mapping from global MODIS product

Global snow products are accessed from National Snow and Ice Data Center (NSIDC) and processed for snow cover mapping.



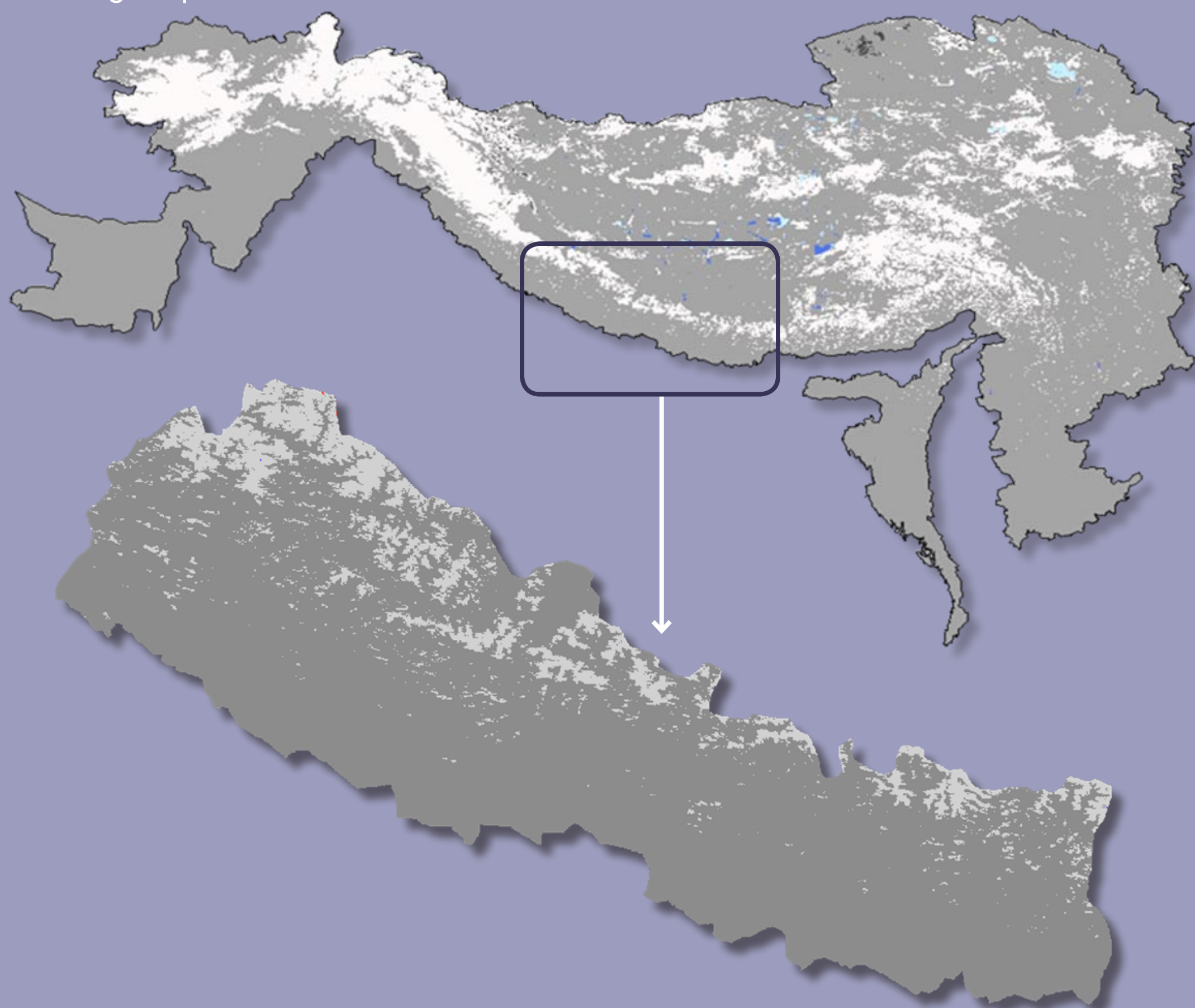
### Work flow adopted for improving the global snow product

Global snow product resulted in over-estimation of snow cover in the HKH region. Filtering techniques were employed to normalise over-estimation.



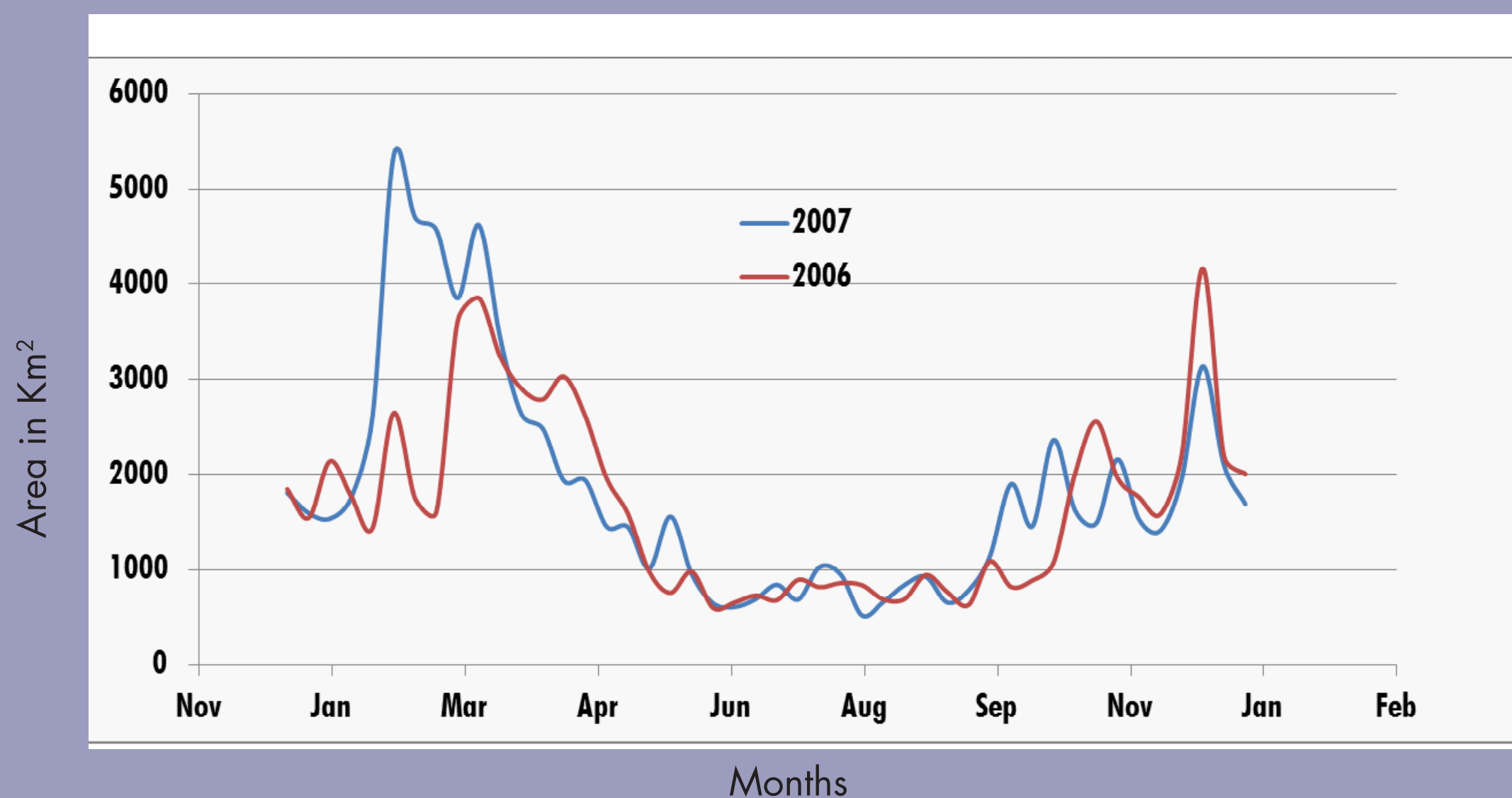
### Towards bridging data gaps - Long term snow cover database of the HKH region and Nepal

At present, 8-days snow product is being generated for the HKH region including Nepal since 2001.



### Snow cover analysis

Intra-annual variation of snow in Nepal for the year 2006 and 2007.



Altitudinal variation of snow cover in Nepal for the year 2008

