

Evidence of potential impacts of human activities on monsoon climate....

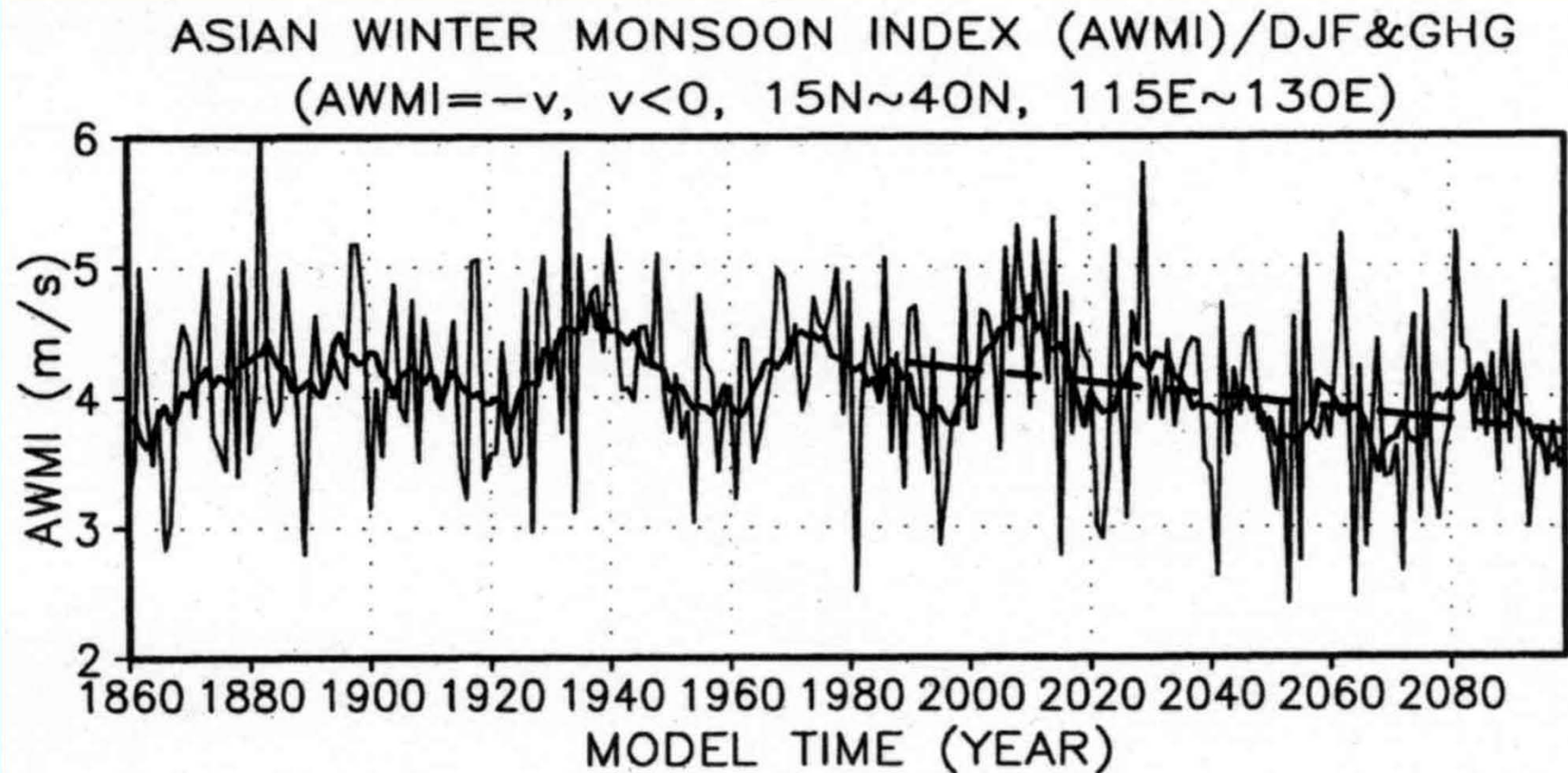
1. Changing monsoon climate under greenhouse effect
2. Impacts of anthropogenic aerosols (sulphate aerosols , black carbon, ABC, etc) on monsoon climate
3. Impacts of large scale changes of land use /cover on monsoon climate

Changing monsoon climate under greenhouse effect

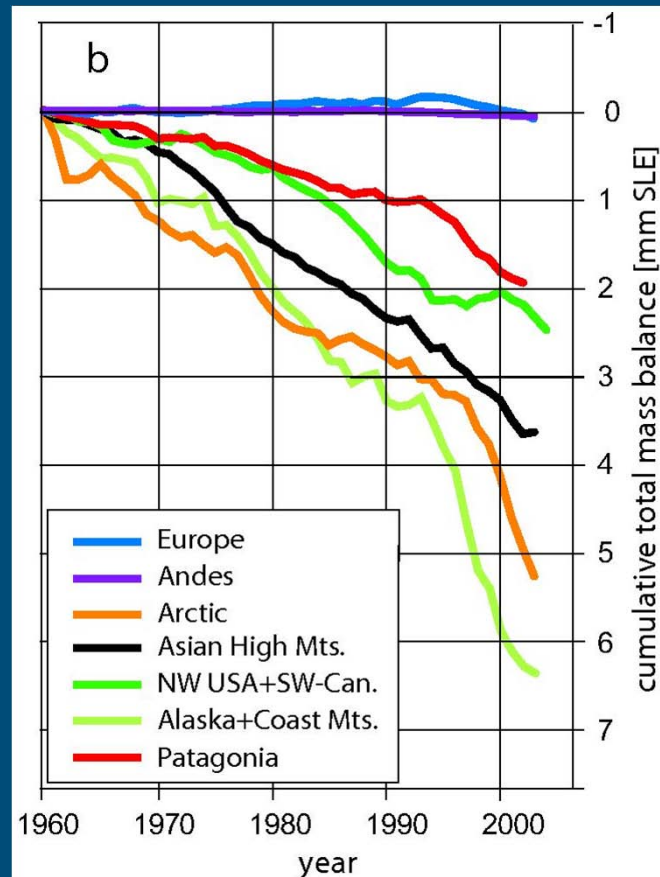
e.g.

- Increasing summer monsoon rainfall and variability in South Asia;
- Weakening of winter monsoon over Asia continent;
- Early onset of Indian summer monsoon

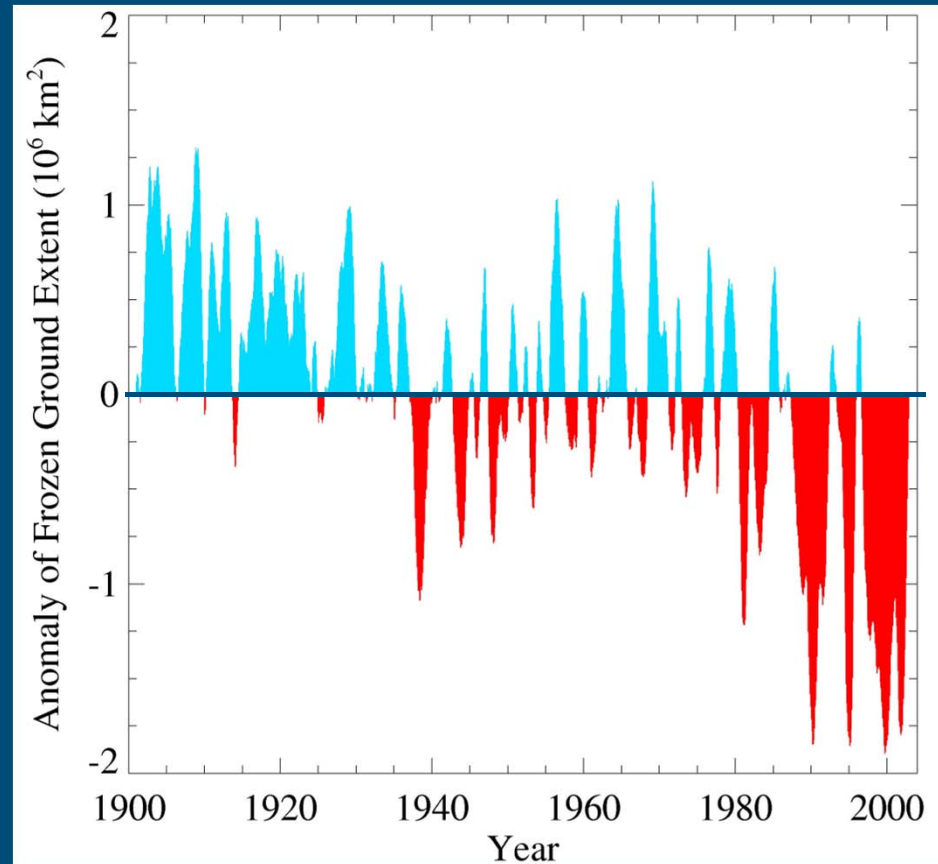
Weakening of winter monsoon under global warming (IS92a,ECHAM4)



Glaciers and frozen ground are receding

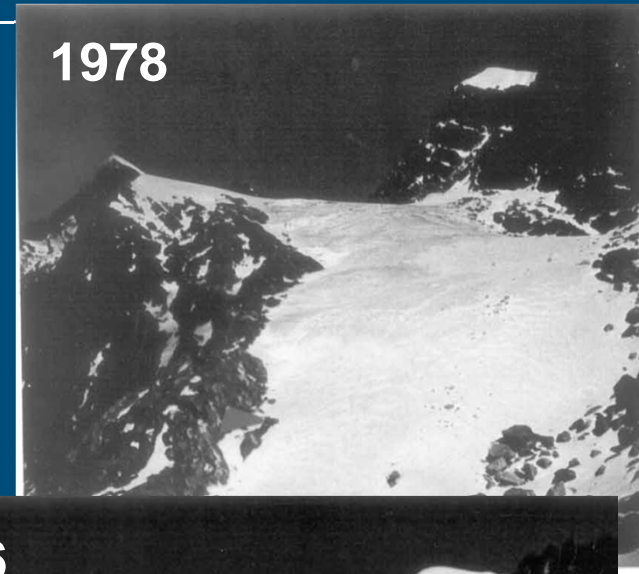
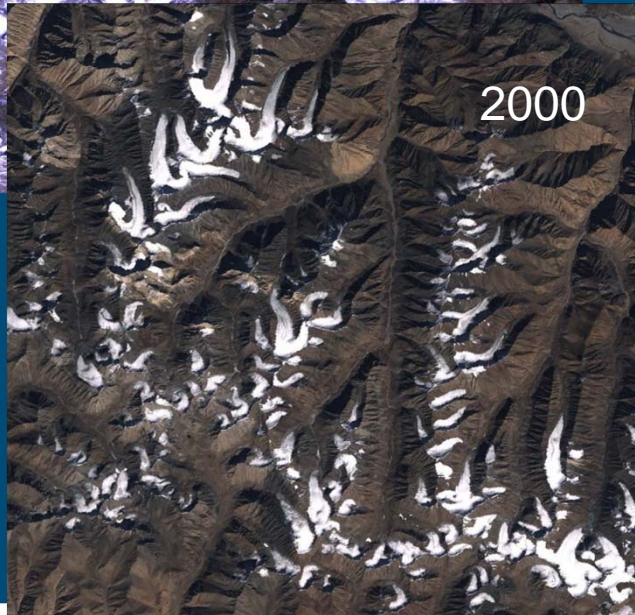
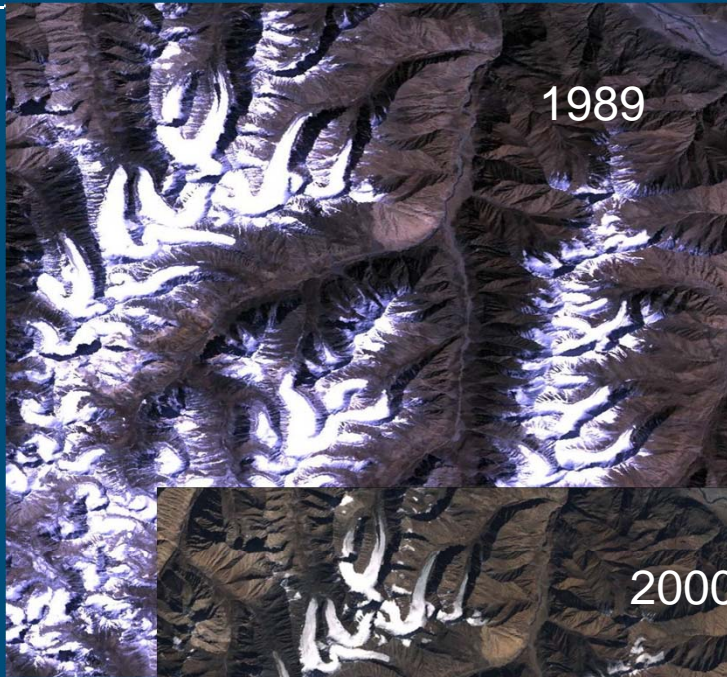


Increased Glacier retreat since the early 1990s



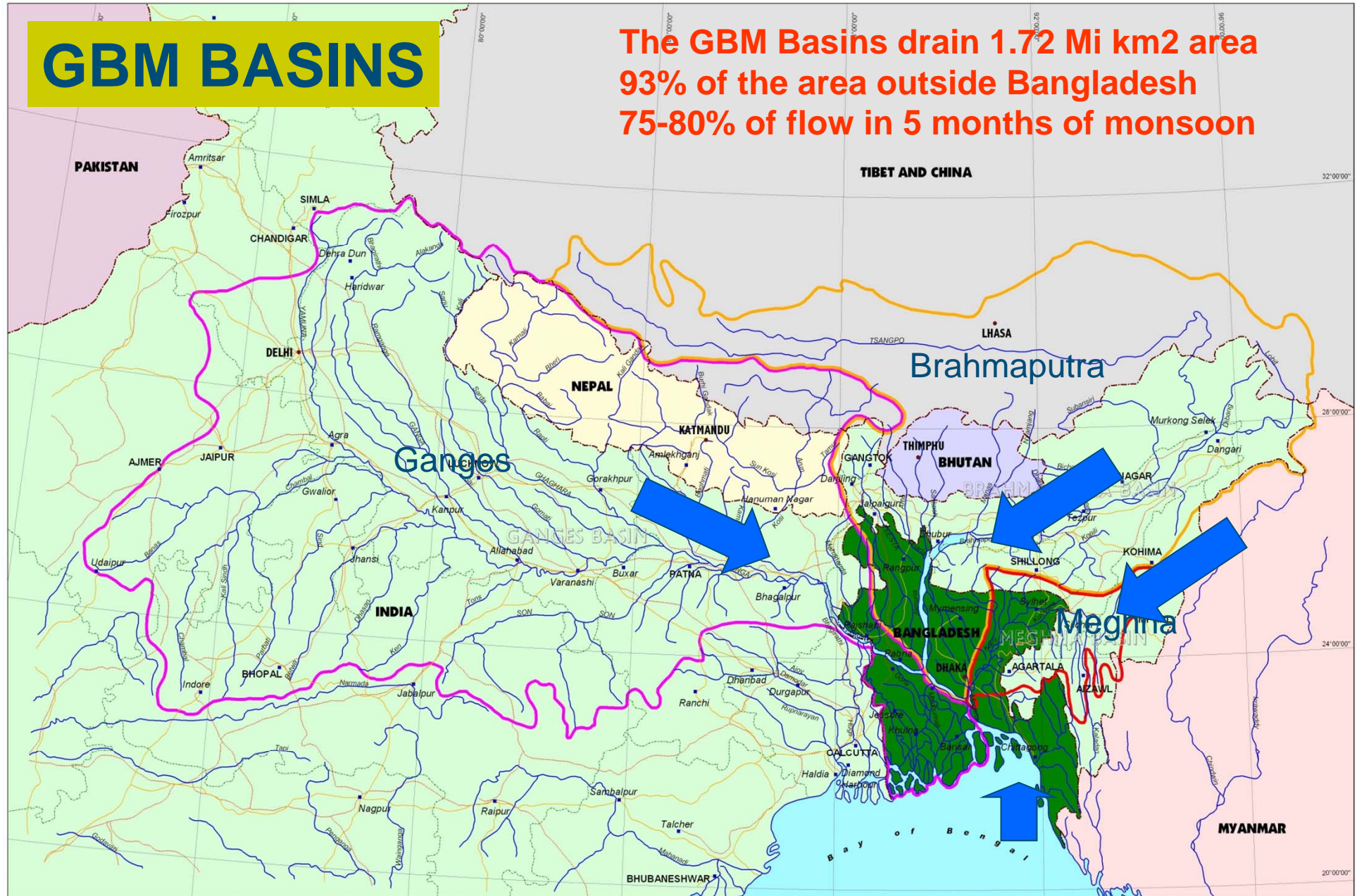
Area of seasonally frozen ground in NH has decreased by 7% from 1901 to 2002

Glacier melt in the Himalayas



GBM BASINS

The GBM Basins drain 1.72 Mi km² area
93% of the area outside Bangladesh
75-80% of flow in 5 months of monsoon



Legend

- International Boundary
- Indian State Boundary
- Capital
- Cities
- River
- Road
- Railway
- Meghna
- Brahmaputra
- Ganges

The Ganges, The Brahmaputra & The Meghna River Basins

