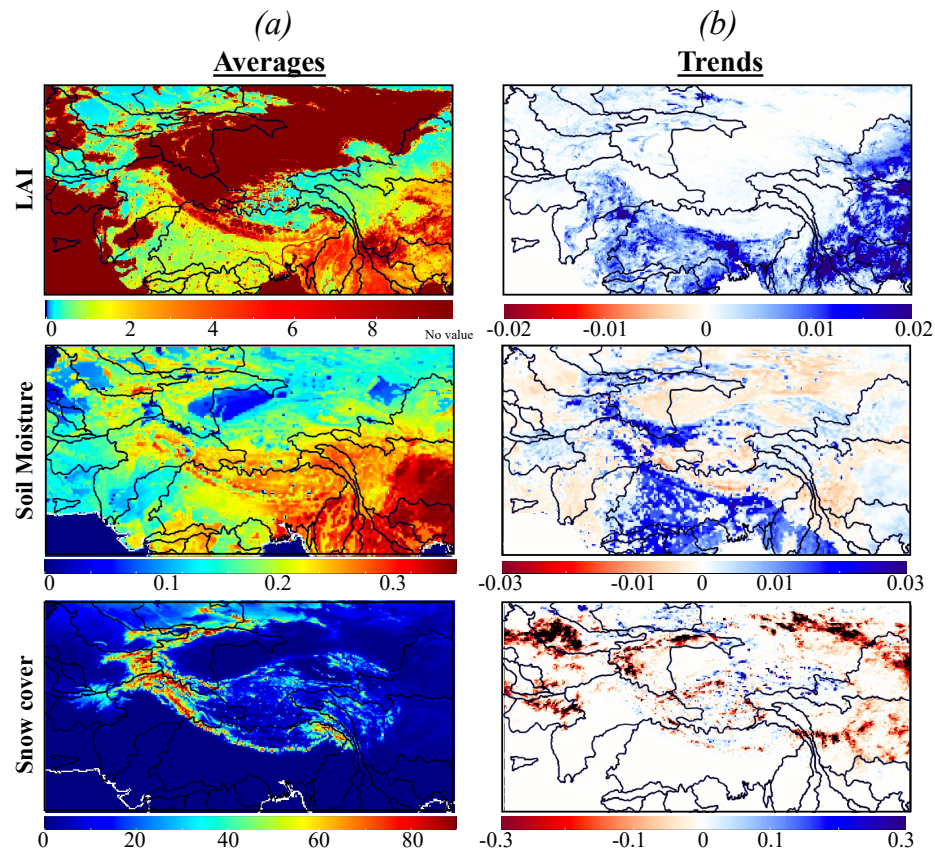
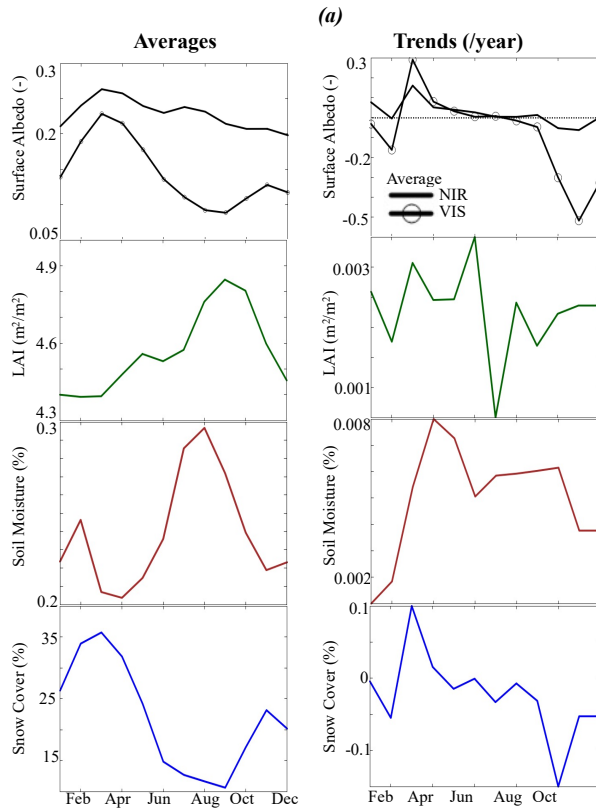


Supplementary Information

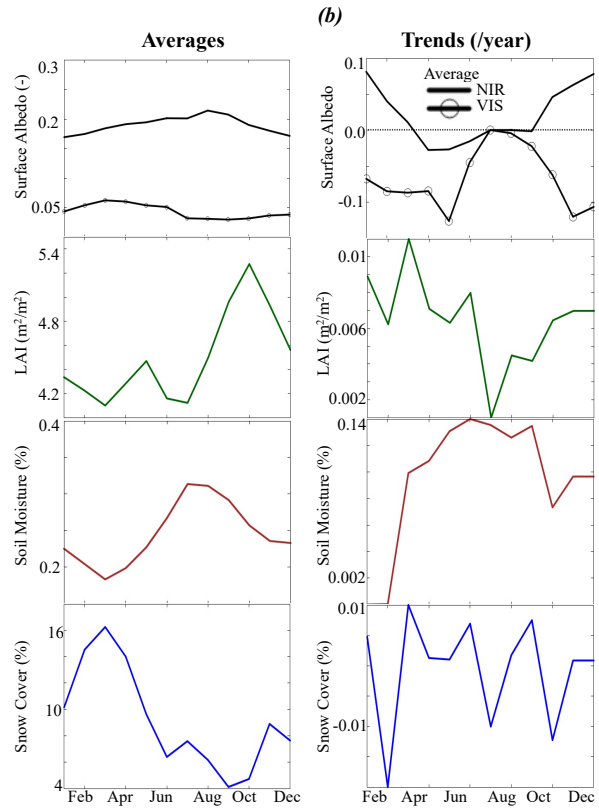


Supplementary Figure 1: Spatial distributions of the yearly (a) averages of LAI, soil moisture, and snow cover, and (b) their corresponding annual trends from 2003 to 2020. Trends were computed using the Mann-Kendall test with a confidence level of 95%.

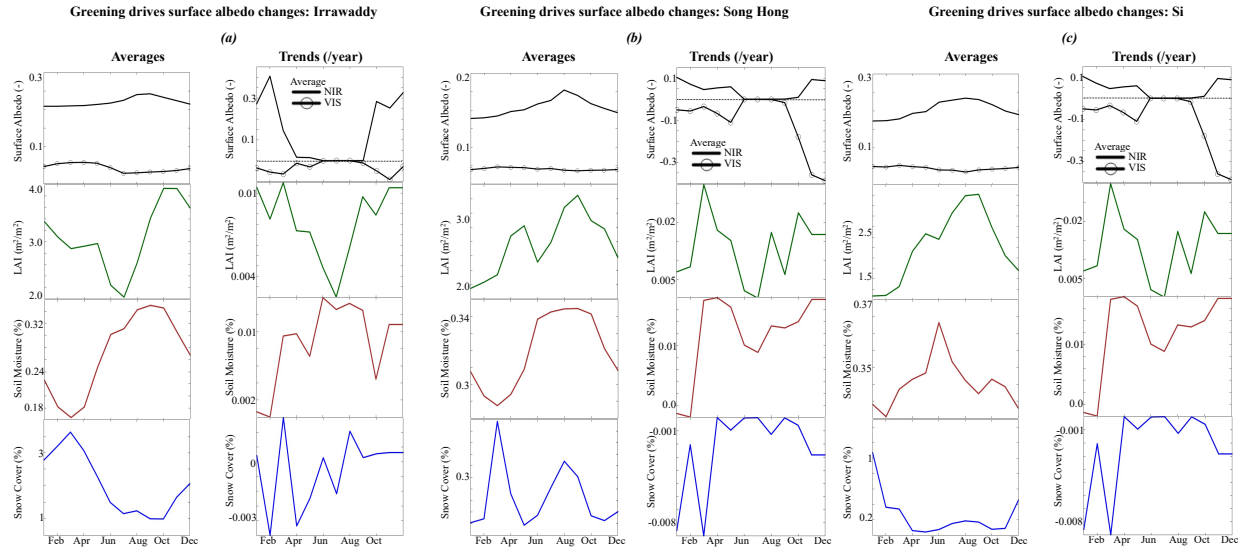
Snow Cover and LAI drive surface albedo changes: Ganges Central and Eastern Himalayas



LAI drives surface albedo changes: Ganges Forests



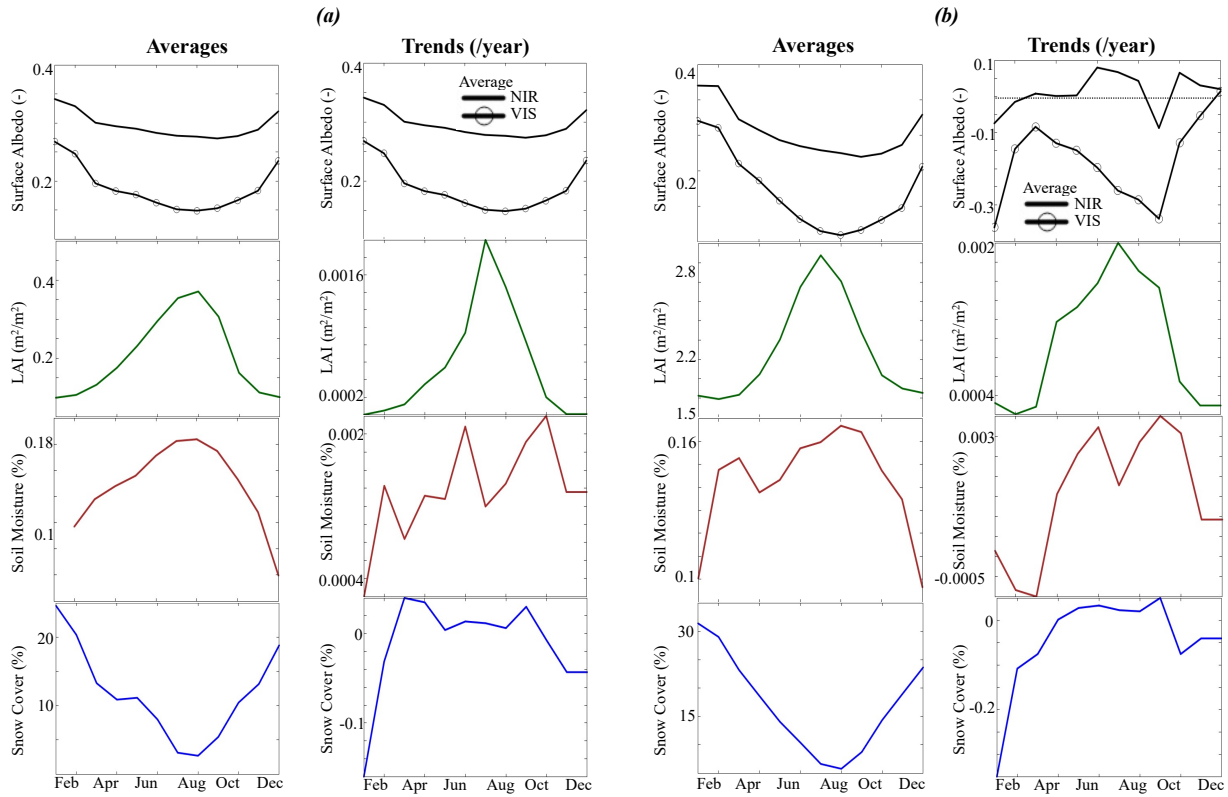
Supplementary Figure 2: Monthly variations of trends and averages of surface albedo, LAI, soil moisture and snow cover in the Ganges-Brahmaputra basin (a) Central and Eastern Himalayas, and (b) Snow-free forests. Trends were computed using the Mann-Kendall test with a confidence level of 95%.



Supplementary Figure 3: Monthly variations of trends and averages of surface albedo, LAI, soil moisture and snow cover in the (a) Irrawaddy, (b) Song Hong, and (c) Si basins. Trends were computed using the Mann-Kendall test with a confidence level of 95%.

Snow cover drives surface albedo changes: Tibetan Plateau

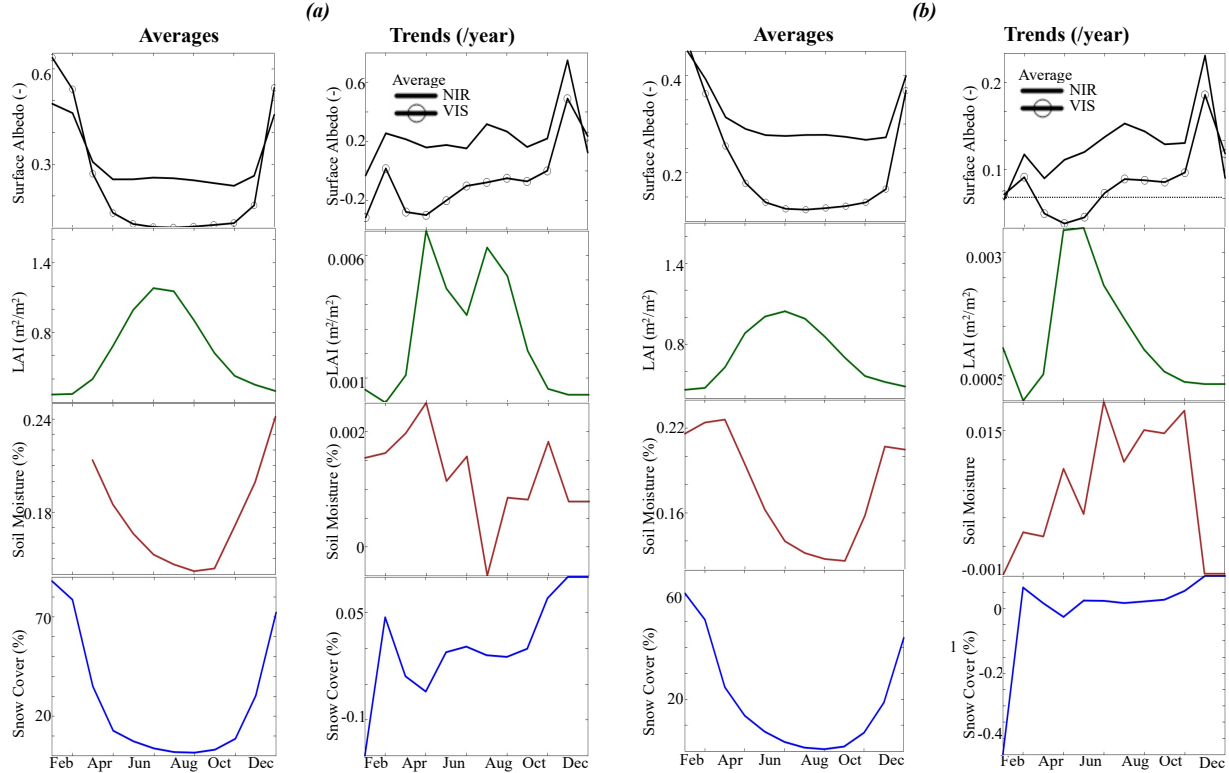
Snow cover drives surface albedo changes: Tarim



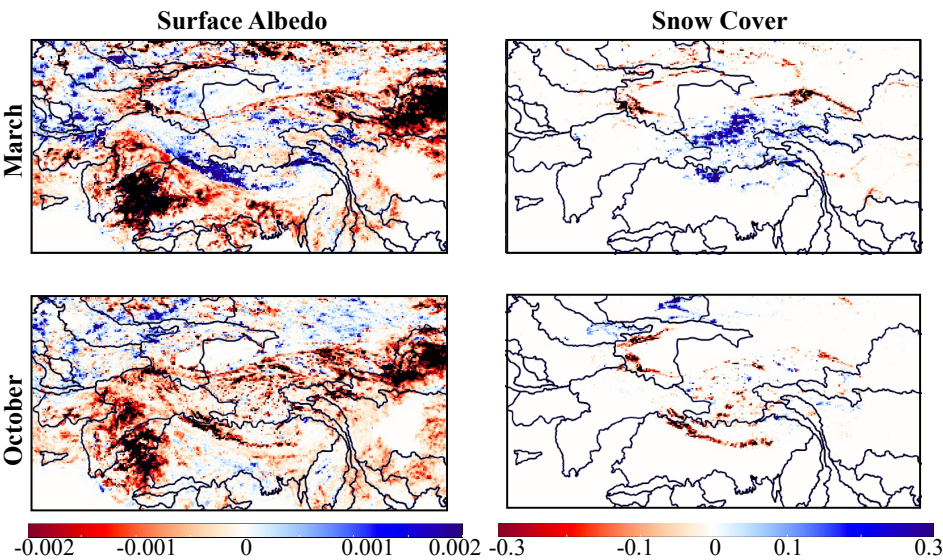
Supplementary Figure 5: Monthly variations of trends and averages of surface albedo, LAI, soil moisture and snow cover in the (a) Tibetan Plateau and (b) Tarim basin. Trends were computed using the Mann-Kendall test with a confidence level of 95%.

Snow cover, soil moisture, and LAI drive surface albedo changes: Ili

Snow cover, soil moisture, and LAI drive surface albedo changes: Syr Darya



Supplementary Figure 6: Monthly variations of trends and averages of surface albedo, LAI, soil moisture and snow cover in the (a) Ili and (b) Syr Darya basins. Trends were computed using the Mann-Kendall test with a confidence level of 95%.



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Supplementary Figure 7: Spatial distributions of the yearly trends of visible white-sky surface albedo and snow cover in March and October. Trends were computed using the Mann-Kendall test with a confidence level of 95% show increasing trends in surface albedo and snow cover in Western Himalayas in March while the surface albedo tends to decrease in October.