The Svalbard archipelago, with a land area of 61,022 km2, slightly larger than the state of Himachal Pradesh, occupies only around 0.4 per cent of the Arctic region.  With just 2145 registered permanent residents (as on April 2017) concentrated mostly in Longyearbyen and Ny-Ålesund, Svalbard, like the rest of the Arctic, cannot be considered a significant  contributor to global climate change caused by human activities.  Yet few places on Earth show the impact of a changing climate in the landscape and the ecosystem as vividly as the Arctic, and in particular, Svalbard and its offshore areas.    For instance, the area and thickness of the sea ice which forms and melts each year in the Arctic have been demonstrated to have decreased steadily over the past three decades or so.  This has led to a scenario of a vicious circle in the Arctic - delayed ice formation and availability of more open waters leading to warmer air and sea surface temperatures which in effect reduce sea ice formation.  Decline in sea ice formation would also drastically impact the large-scale ocean circulation of the North Atlantic which is responsible for the oceanic transport of heat from the equator to high latitudes.  While the relative importance of the natural versus anthropogenic factors in driving the recent Arctic sea-ice decline is poorly known and much debated, what is significant is the effect of such recent warming of the atmosphere, ocean and land on Svalbard.

            In this paper, we review some of the results of the recent studies carried out on the Kongsfjorden-Krossfjorden system of Svalbard which bring out the sensitivity of this fjord to inter-annual changes in hydrography, hydrochemistry and chemical signatures in the surface sediments over the past few years.   Although this sheltered ford system may not be truly representative of the entire Arctic region, by virtue of its accessibility, the delicate balance it maintains between the advection of a "Transformed" Atlantic Water mass (a mixture of the warm and saline Atlantic water and the cold Arctic water)  and the glacial runoff from the large glaciers at its head, and the observable  increasingly ice-free nature of the fjord throughout the winter for the past few years,  it does provide an ideal reference site for long-term monitoring of an Arctic system for short-term climate variabilities.

The studies clearly demonstrate that the Svalbard has indeed warmed in recent years; the documented changes in the associated ecosystem also corroborate this trend.  A warming Svalbard could be an anomaly, or it could be the manifestation of the sensitivity of the oceanic circulation to fluctuations in temperature and salinity and/or in atmospheric circulation brought about by a rapidly changing climate.  If the latter, these changes can influence the climate far removed from the Arctic itself.

 Let not that ice melt.