Glaciers of Nubra Valley, Karakorum Mountains, Ladakh (India) vis-à-vis Climate Change

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Nubra valley, occupying an area of approximately 6000 km^2, is situated in the Karakorum mountains of Ladakh, Jammu & Kashmir State. The river Nubra originates from the largest glacier, namely Siachen to meet river Shyok that ultimately joins the river Indus. The valley houses 114 glaciers of various sizes out of which the Siachen is the largest one. The study herein includes the change in size of glaciers over a time series of 14 years, between 1989 and 2001, on the basis of LiS III satellite imageries. Change in the size of 30 glaciers has been observed over a period of four decades since 1969, considering the SOI topographic sheets of 1969 as the base. The glaciers are more or less equally distributed in all directions with no preference to any particular direction. However, 16 glaciers are in West, 15 are in East, 14 are in Southeast, 13 each are in Southwest and Northeast, 12 each are in North and Northwest, 10 are in South, 5 are in South-southwest, 3 are in South-southeast and 1 is in North-northeast directions. Out of the 114 glaciers, 32 glaciers have shown gain in the area since 1989, 41 glaciers have shown loss in the area since 1989 and 41 glaciers are static with no major gain or loss in the area since 1989. The detail study of 30 glaciers since 1969 to 2001, based on changes observed in SOI topographic sheets and LiSS III satellite imageries, suggest marginal change in the glaciated area of 30 glaciers from 1156.7 km^2 to 1097.2 km^2. Appreciable loss of glaciated area is recorded between 1969 and 1989 from 1156.7 km^2 to 1101.4 km^2, whereas the loss of glaciated area between 1989 and 2001 has been negligible from 1101.4 km^2 in 1989 to 1097.2 km^2 in 2001. On the other hand the total change in the glaciated area between 1989 and 2001 is negligible from 2785.3 km^2 in 1989 to 2784.3 km^2 in 2001. The observations, thus suggest, that the glaciers housed in Nubra valley are not affected by the change in climate particularly the global warming.