

Supplementary Material for *Glacier elevation and mass changes in Himalayas during 2000-2014*

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Here we provide supplementary information for:

1. Elevation change for each state (Fig. S2-S8)
2. Plot for Normalized mean and median absolute deviation (NMAD) for all the seven states as well as for entire region of study (Fig. S9)

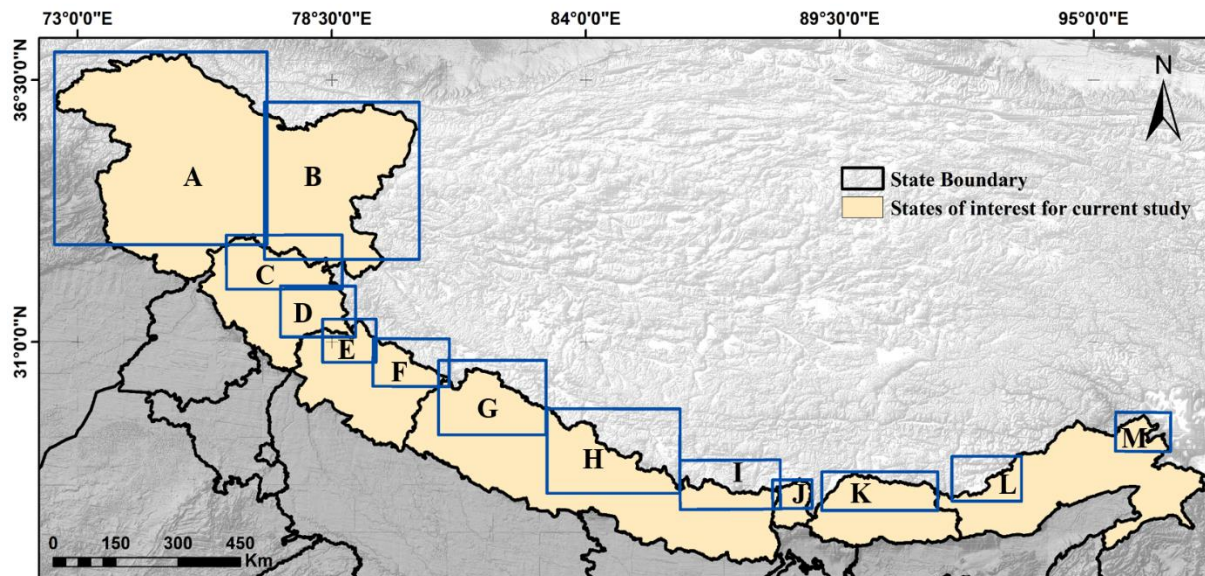


Fig. S1: The blue frames represent the area shown in the consecutive figures (Fig. S2-S8) for elevation change in the seven states namely Jammu and Kashmir consisting of frames A and B, Himachal Pradesh comprising of C and D, Uttarakhand divided in to E and F, Nepal into three frames as G, H and I, Sikkim in frame J, Bhutan covered by K frame and Arunachal Pradesh by L and M.

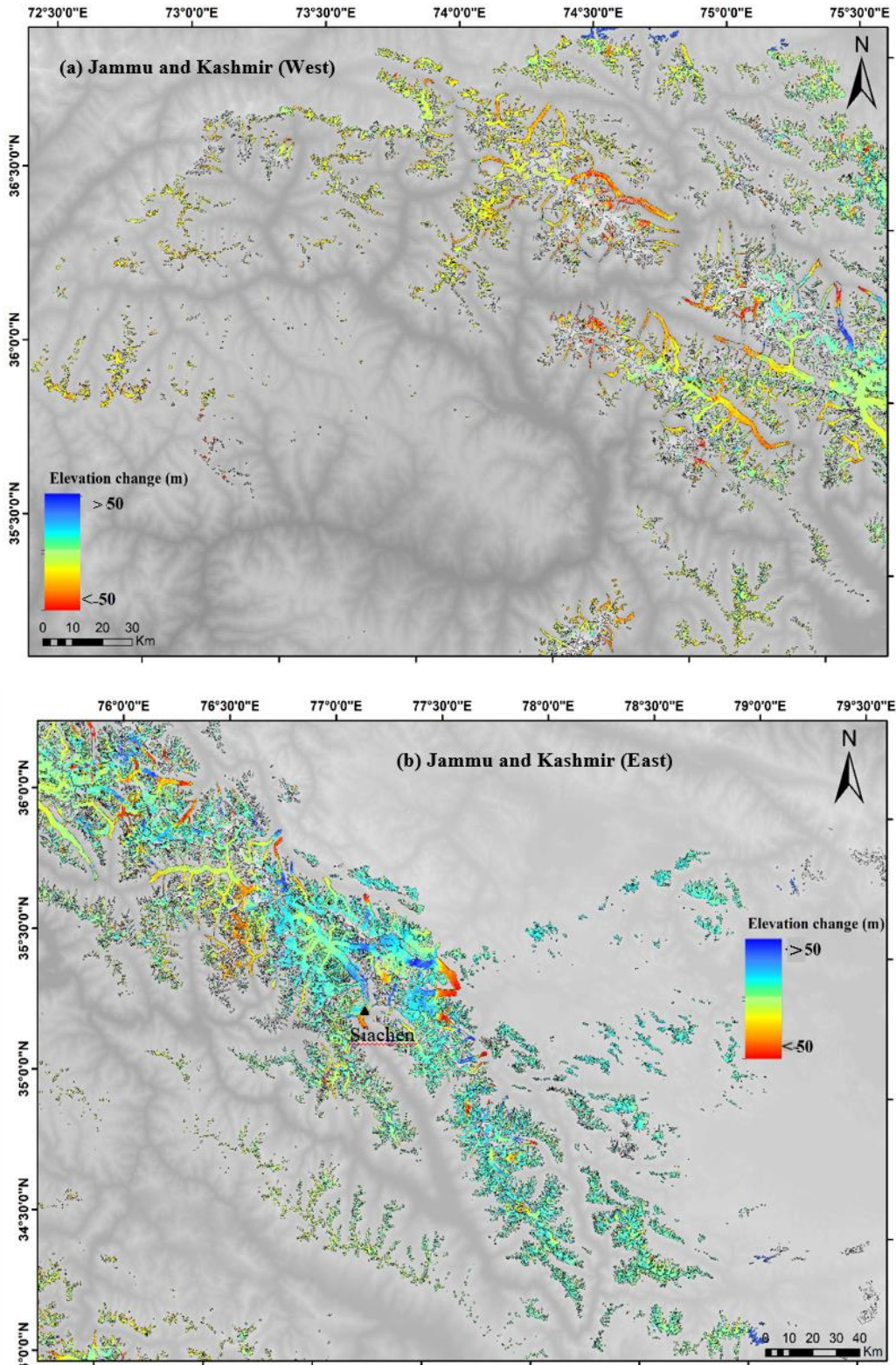


Fig. S2: Spatial distribution of elevation change for Jammu and Kashmir from 2000-2014 with the elevation change varying from -50m to 50m with red color indicating reduction in snow/ice-thickness and blue color indicative of a positive thickness (overall accumulation over 14 years) : (a) Enlarged portion of Fig. 2 for the rectangular box A as shown in Fig. S1, (b) enlarged portion of Fig. 2 for rectangular box B as shown in Fig. S1.

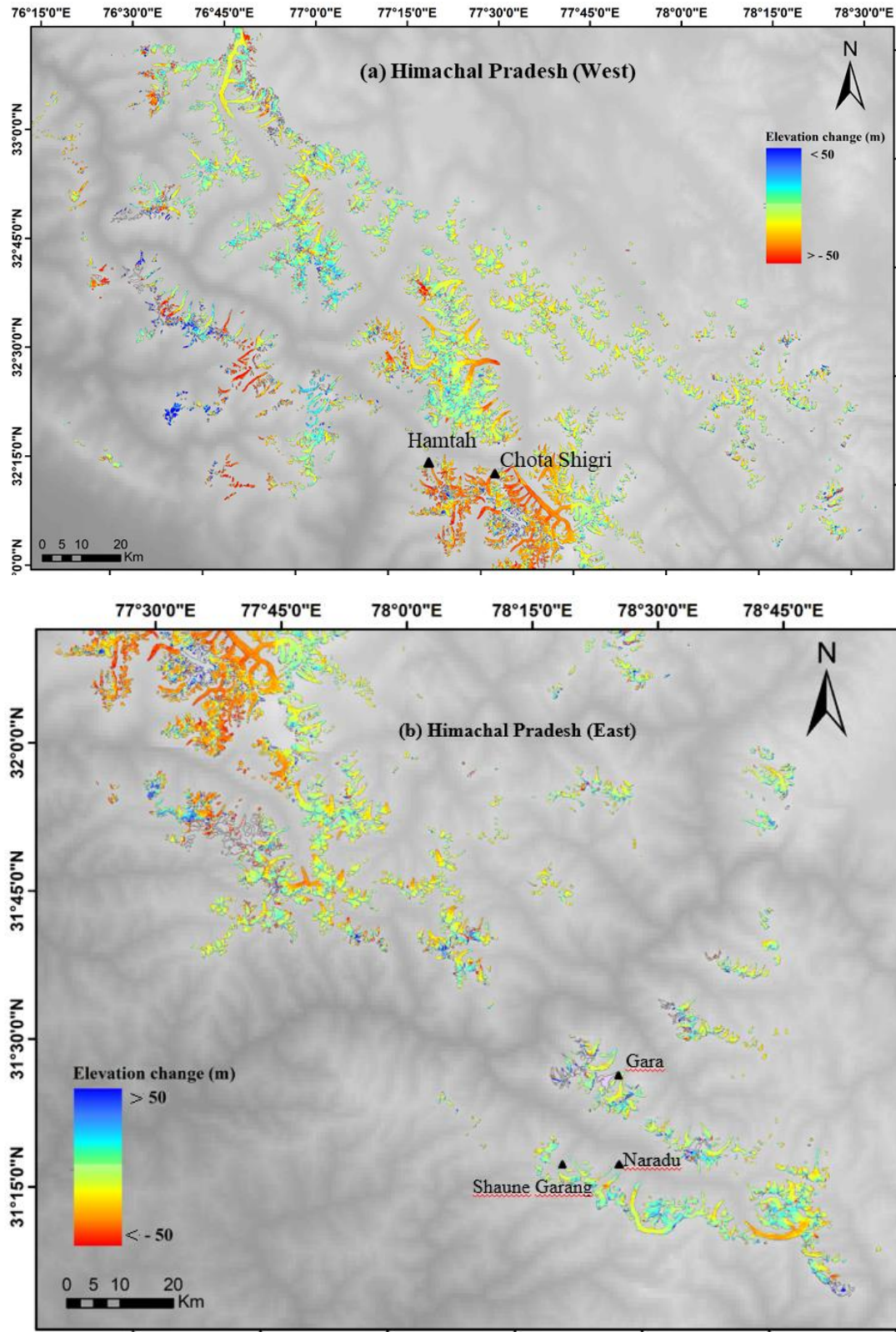


Fig. S3 : Spatial distribution of elevation change for Himachal Pradesh from 2000-2014 with the elevation change varying from -50m to 50m with red color indicating reduction in snow/ice-thickness and blue color indicative of a positive thickness (overall accumulation over 14 years) : (a) enlarged portion of Fig. 2 for rectangular box C as shown in Fig. S1, (b) enlarged portion of Fig. 2 for rectangular box D as shown in Fig. S1.

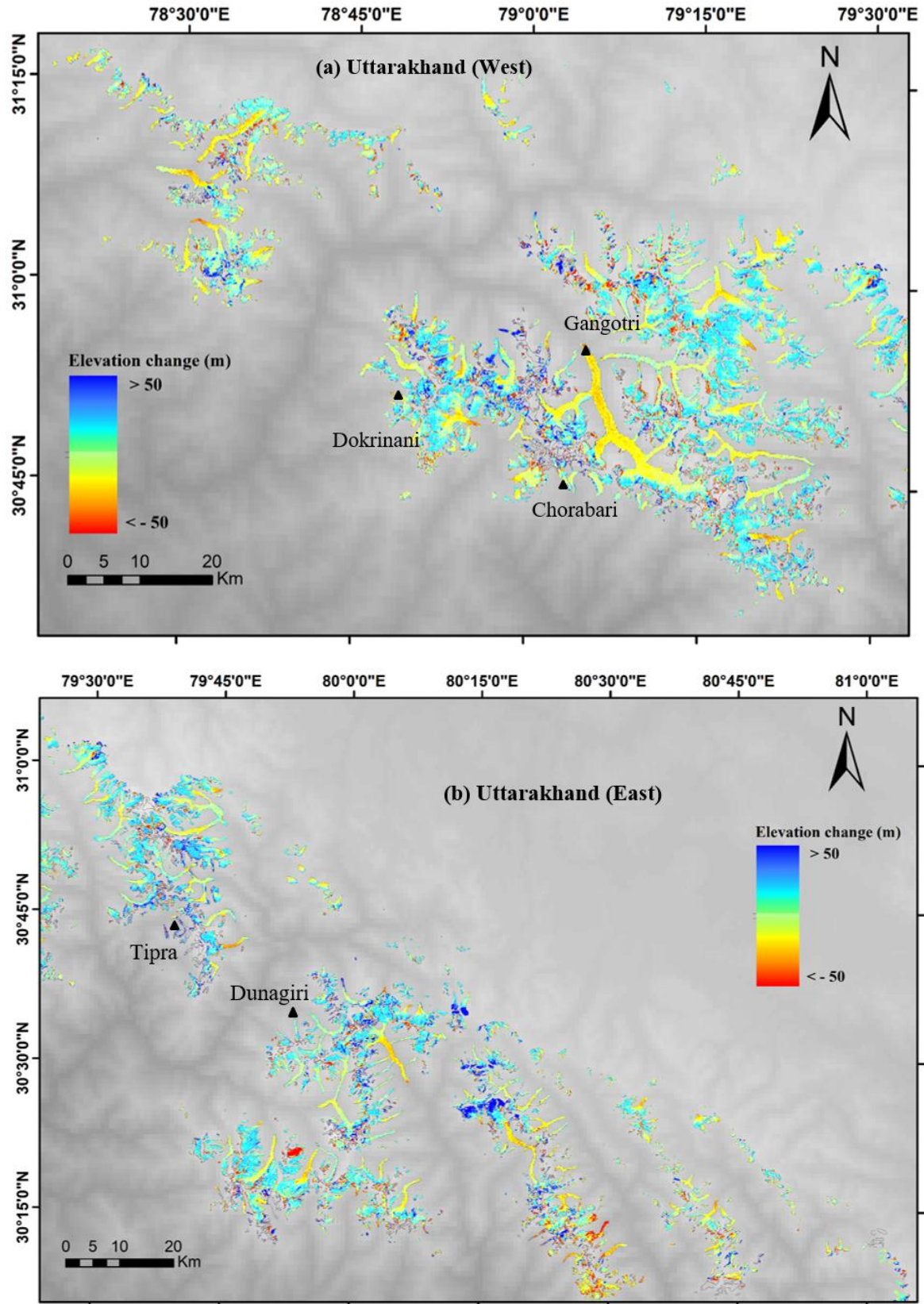


Fig. S4 : Spatial distribution of elevation change for Uttarakhand from 2000-2014 with the elevation change varying from -50m to 50m with red color indicating reduction in snow/ice-thickness and blue color indicative of a positive thickness (overall accumulation over 14 years): (a) Enlarged portion of Fig. 2 for rectangular box E as shown in Fig. S1, (b) enlarged portion of Fig. 2 for rectangular box F as shown in Fig. S1.

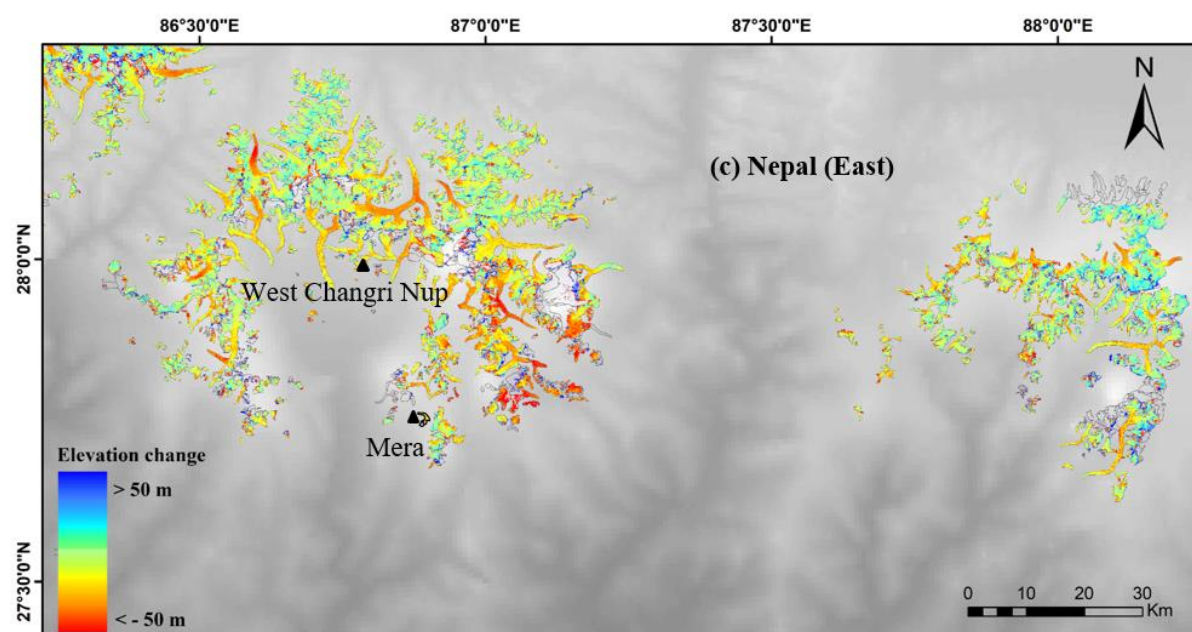
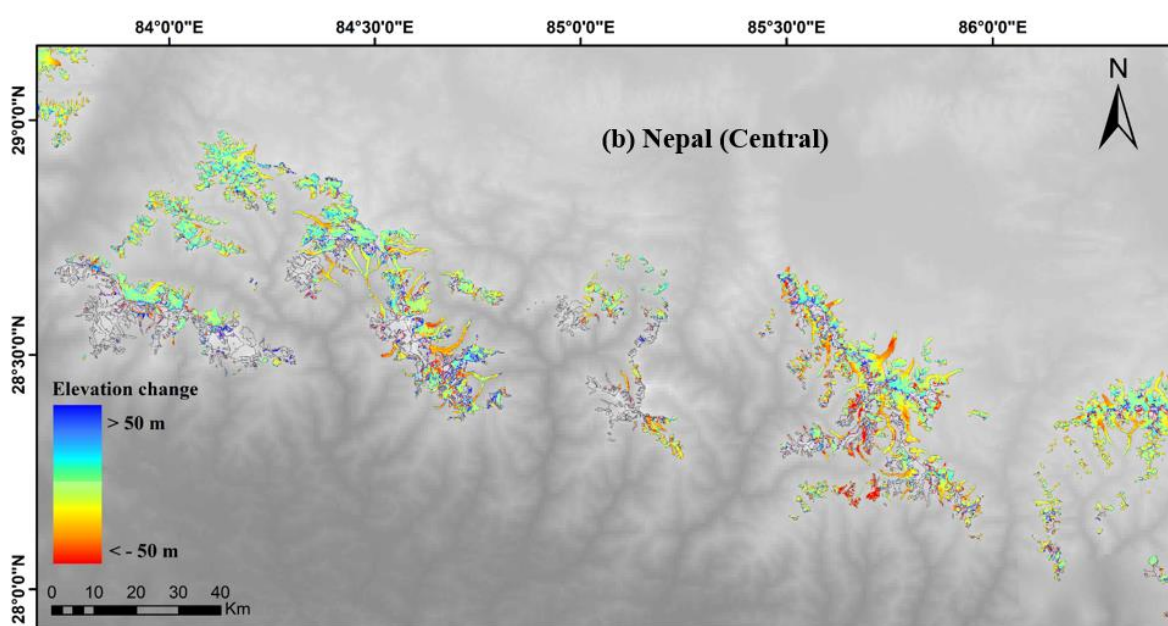
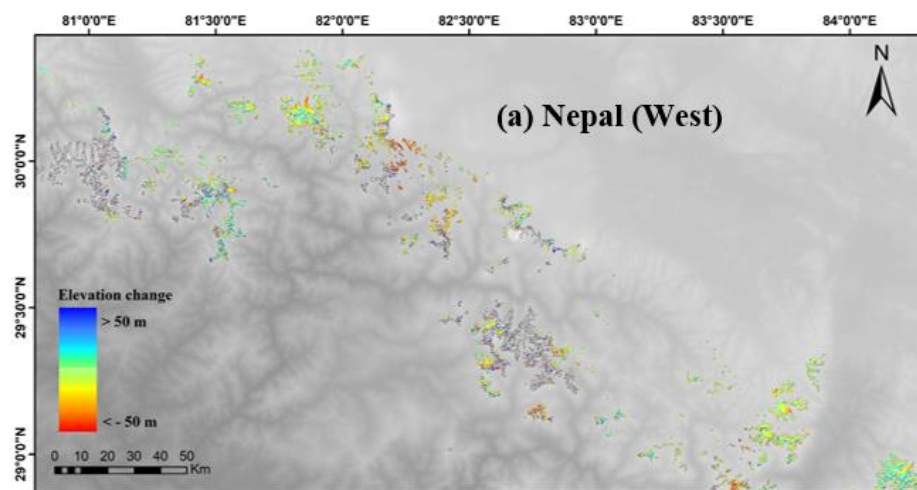


Fig. S5 : Spatial distribution of elevation change in Nepal from 2000-2014 with the elevation change varying from -50m to 50m with red color indicating reduction in snow/ice-thickness and blue color indicative of a positive thickness (overall accumulation over 14 years) : (a) enlarged portion of Fig. 2 for rectangular box G as shown in Fig. S1, (b) enlarged portion of Fig. 2 for rectangular box H as shown in Fig. S1, (c) enlarged portion of Fig. 2 for rectangular box I as shown in Fig. S1.

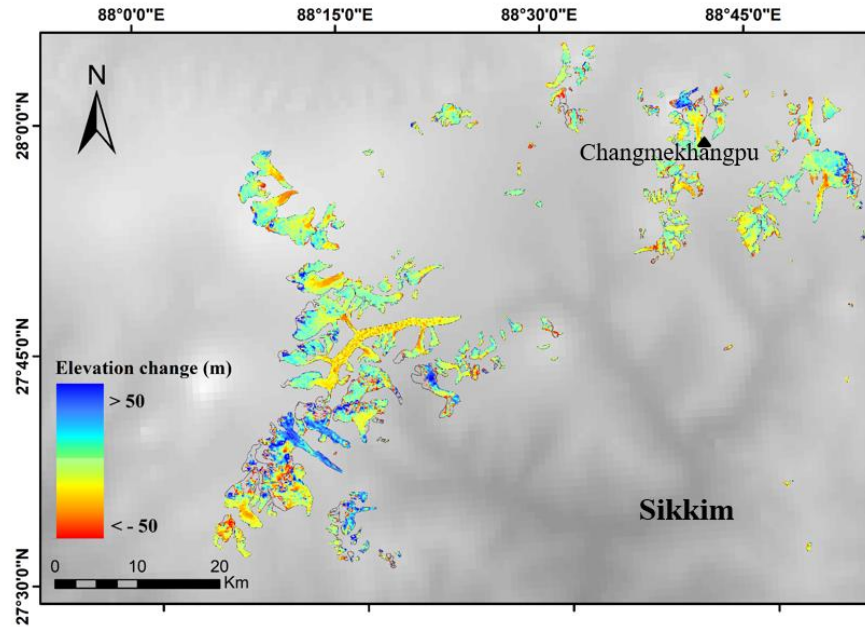


Fig. S6 : Spatial distribution of elevation change in Sikkim from 2000-2014 with the elevation change varying from -50m to 50m with red color indicating reduction in snow/ice-thickness and blue color indicative of a positive thickness (overall accumulation over the 14 years) : the enlarged portion of Fig. 2 for rectangular box J as shown in Fig. S1 is presented here

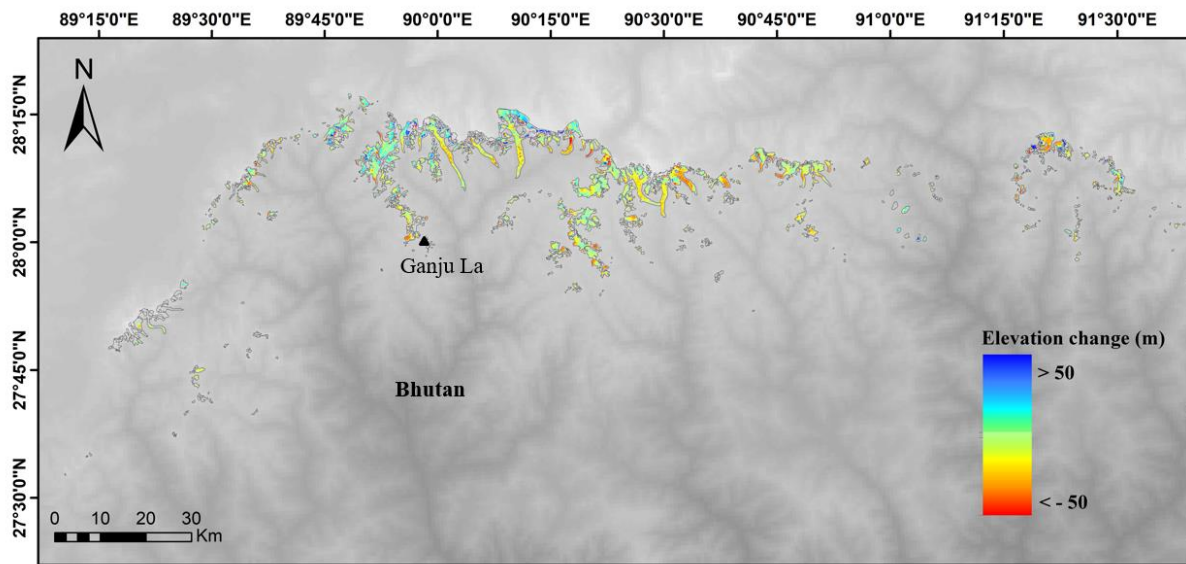


Fig. S7 : Spatial distribution of elevation change in Bhutan from 2000-2014 with the elevation change varying from -50m to 50m with red color indicating reduction in snow/ice-thickness and blue color indicative of a positive thickness (overall accumulation over the 14 years) : the enlarged portion of Fig. 2 for rectangular box K as shown in Fig. S1 is presented here.

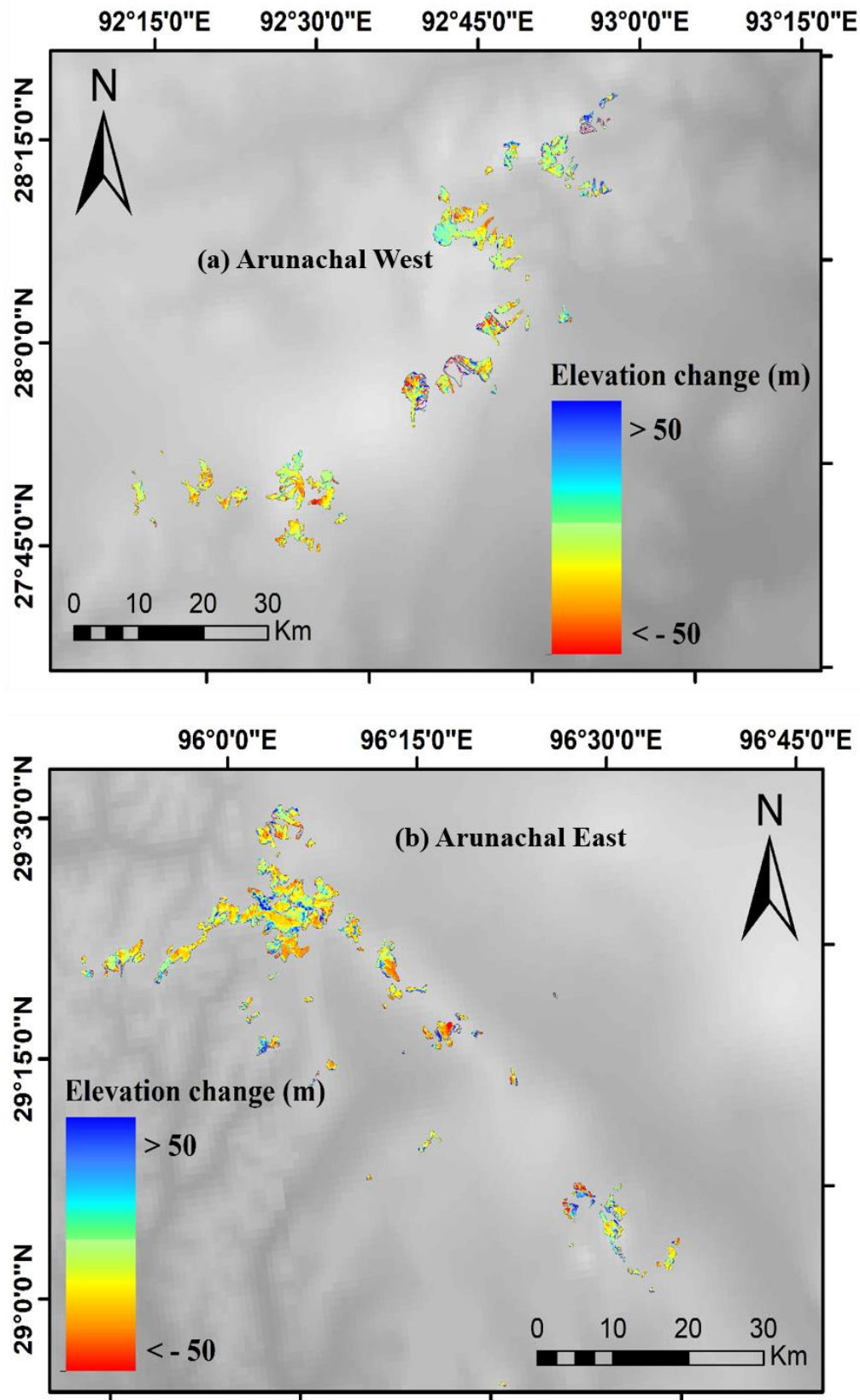


Fig. S8 :Spatial distribution of elevation change in Arunachal Pradesh from 2000-2014 with the elevation change varying from -50m to 50m with red color indicating reduction in snow/ice-thickness and blue color indicative of a positive thickness (overall accumulation over the 14 years) : (a) enlarged portion of Fig. 2 for rectangular box L as shown in Fig. S1, (b) enlarged portion of Fig. 2 for rectangular box M is presented here

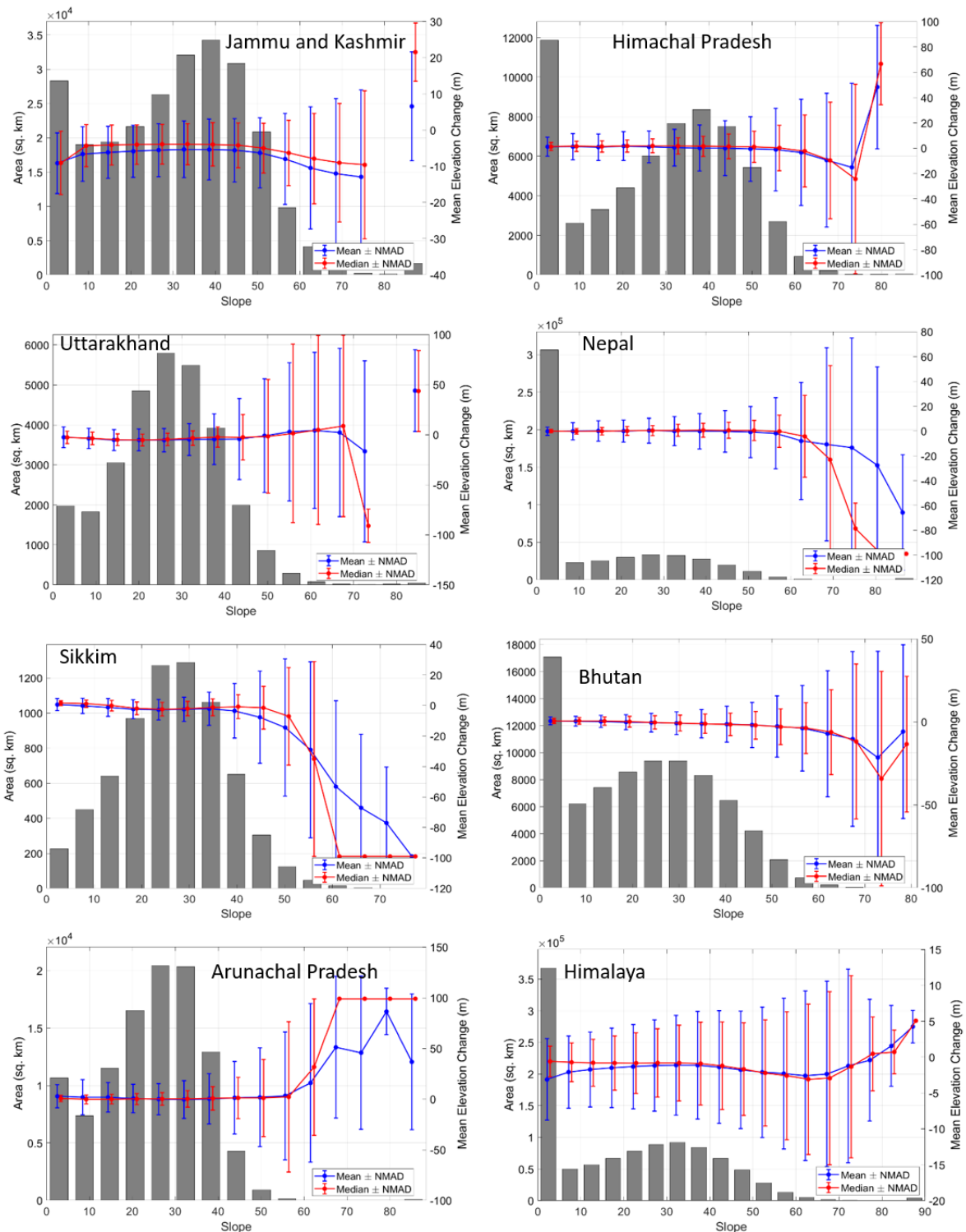


Fig. S9 : Plot of normalized median and mean absolute deviation (NMAD) for all seven states and overall in Himalayas. Red color depicting Normalized Median Absolute Deviation and the blue color representing the Normalized Mean Absolute Deviation. The grey bars show the slope covering the non-glaciated terrain on a 5° interval. The Y-axis on the left shows the non-glaciated area in sq. km and the secondary axis on the right is the mean elevation change in that interval of slope and area.