

Supplementary Data

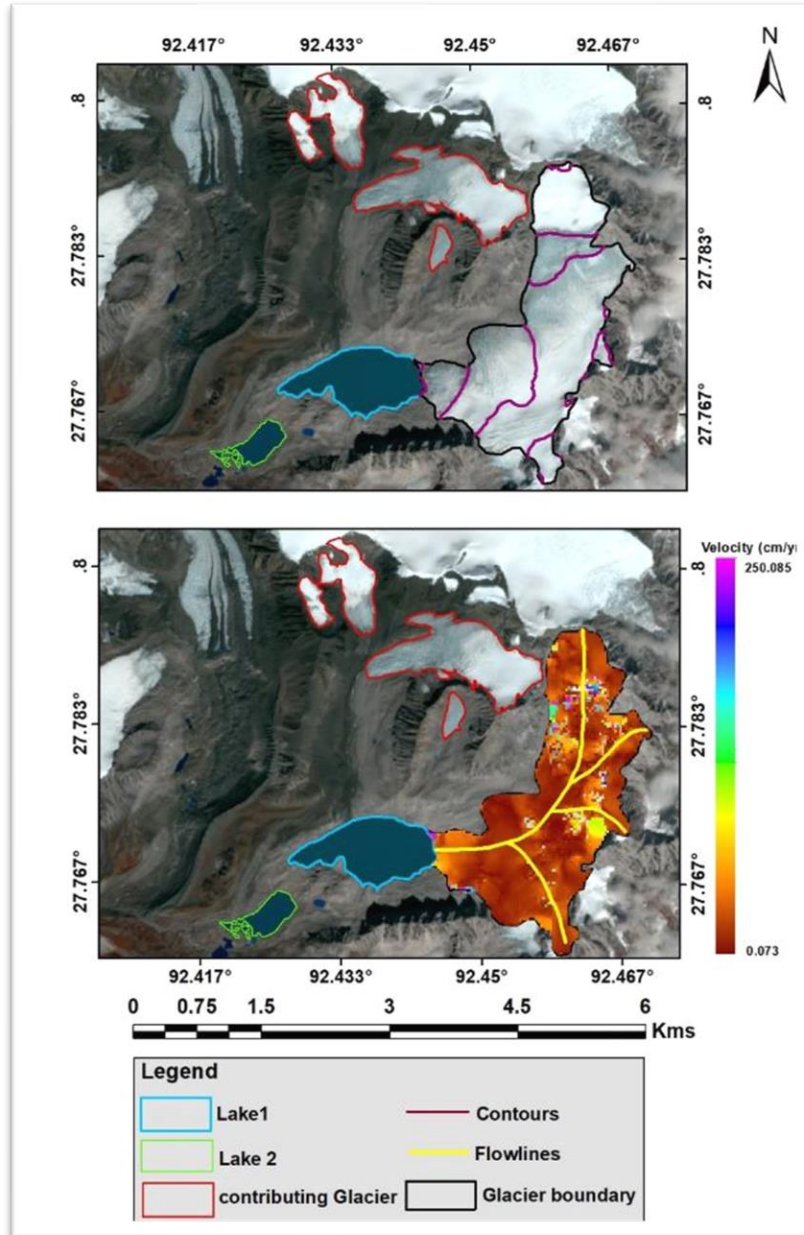


Figure 1: This figure displays all the ancillary input layers required for glacier thickness mapping using HIGTHIM.

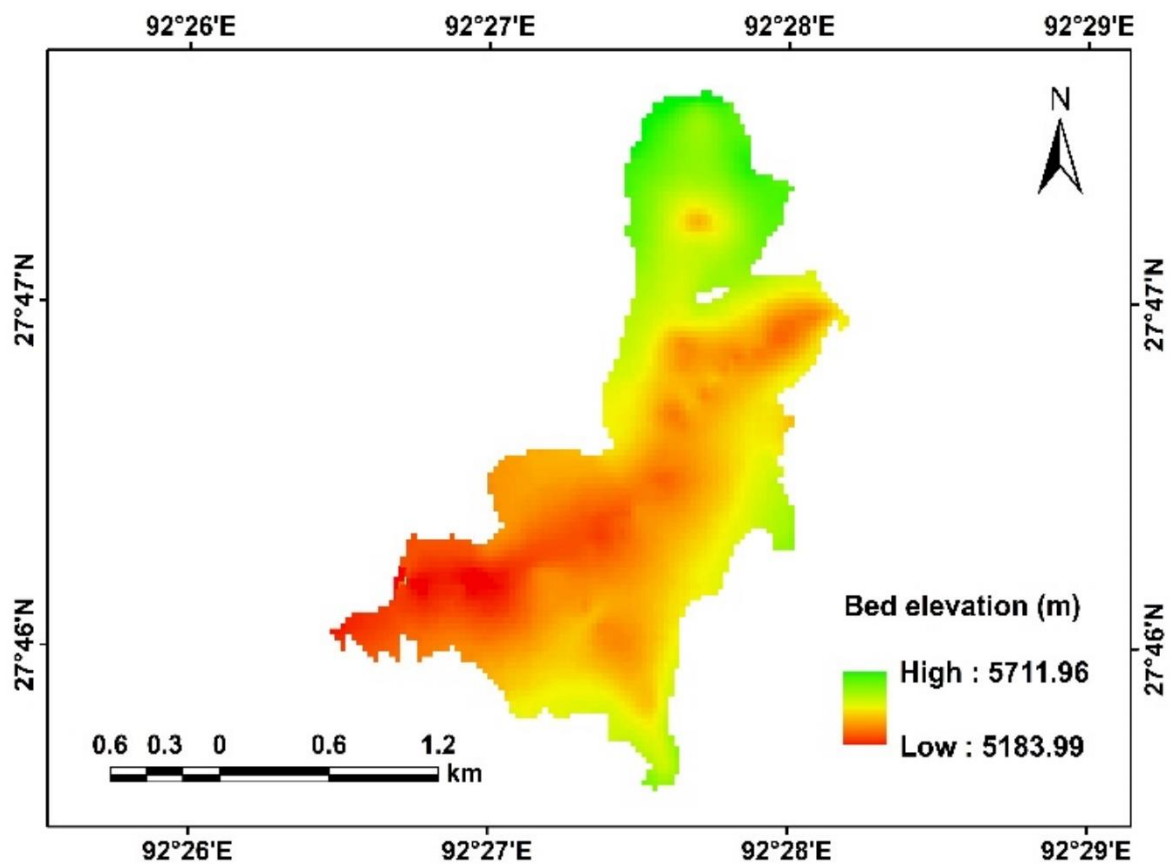


Figure 2: Representation of the bed topography of glacier derived using HIGTHIM tool.

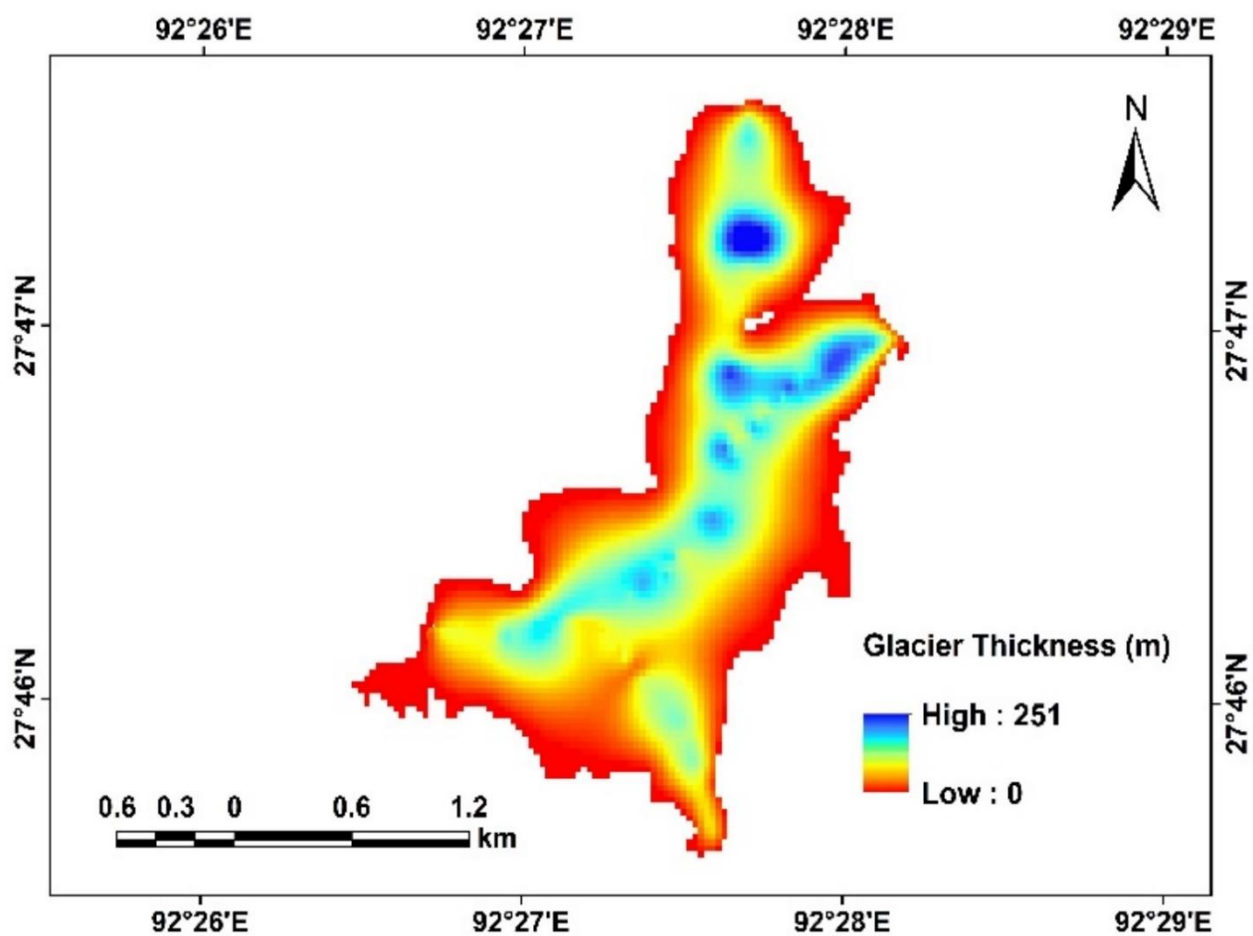


Figure 3: Estimated glacier thickness in 2023 using HIGTHIM.

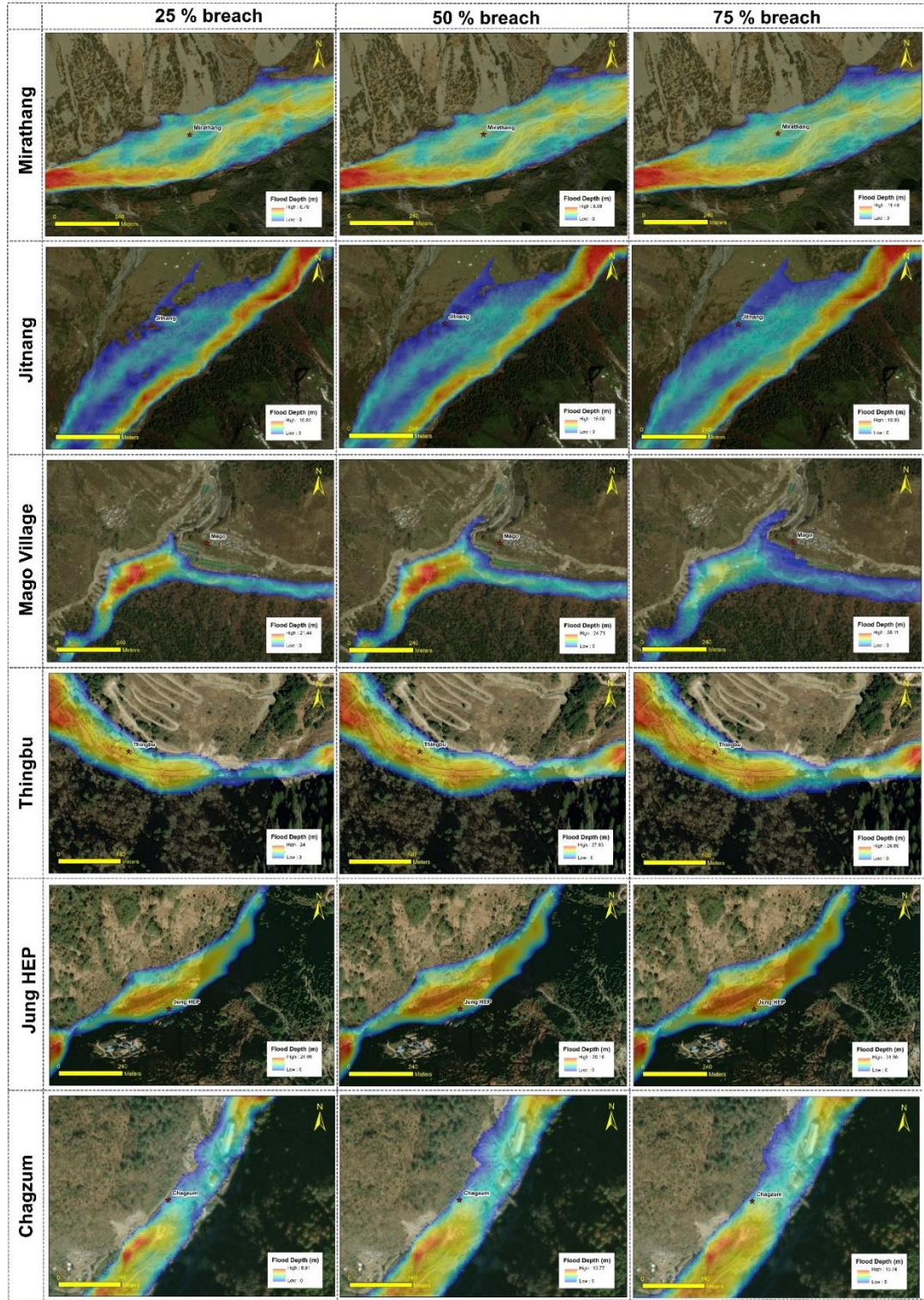


Figure 4: Flood depth maps for 75%, 50% and 25% lake breach scenarios for breaching of the present lake

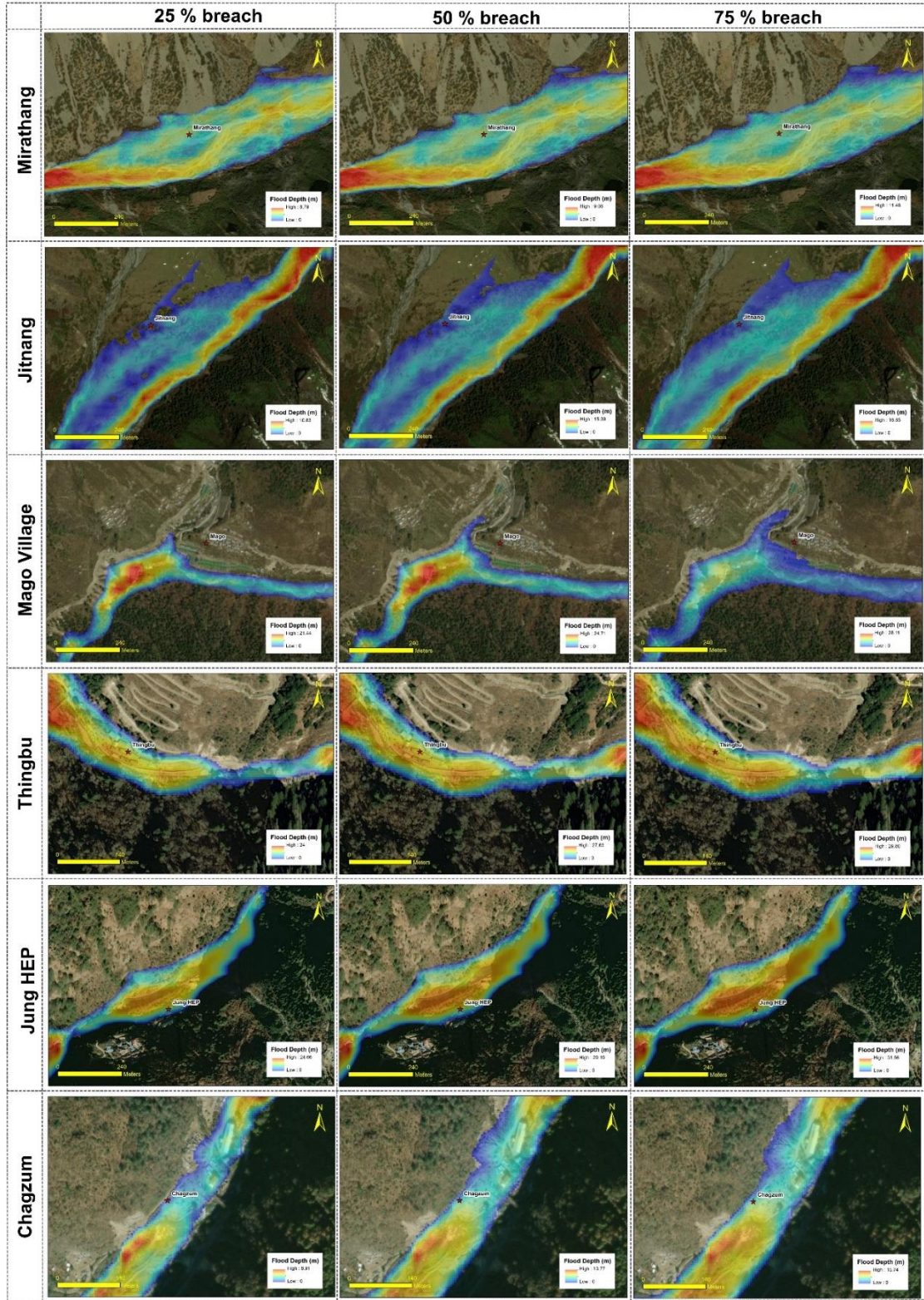


Figure 5: Flood depth maps for 75%, 50% and 25% lake breach scenarios for breaching of the lake with projected expansion