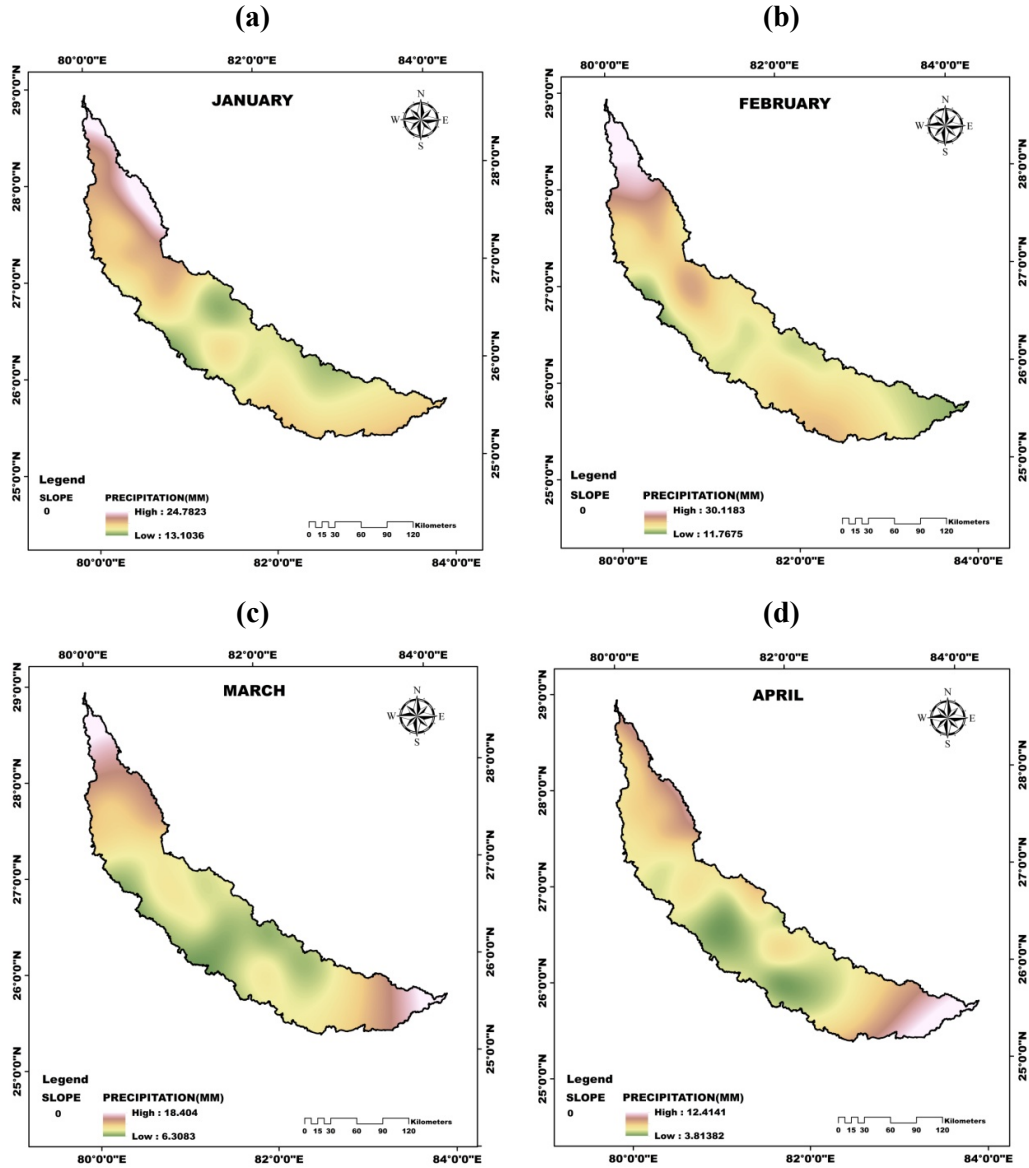
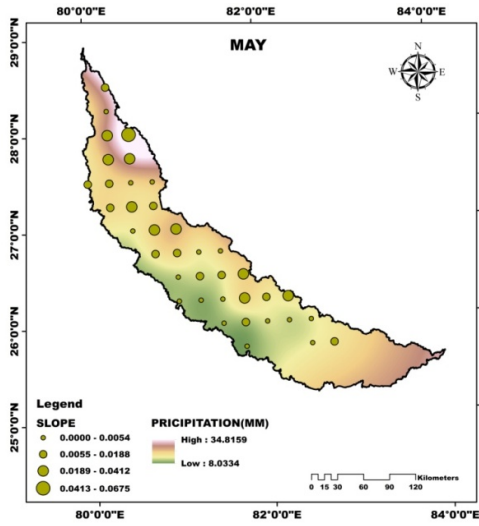


Supplementary Materials:

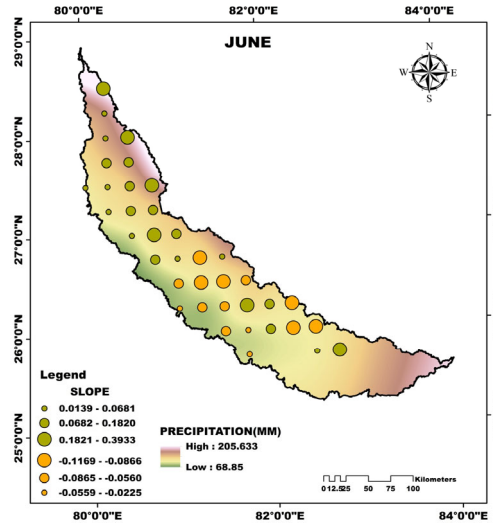
AVS Kalyan ^{1,2}, Dillip Kumar Ghose ², Rahul Thalagapu ¹, Ravi Kumar Guntu ³, Ankit Agarwal ^{3,4}, Jürgen Kurths ^{5,6,7} and Maheswaran Rathinasamy ^{1,*}



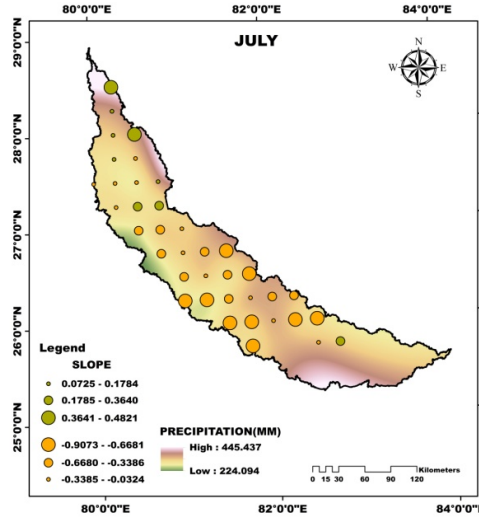
(e)



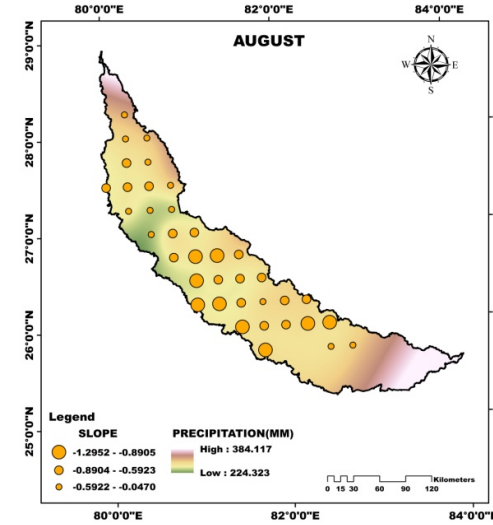
(f)



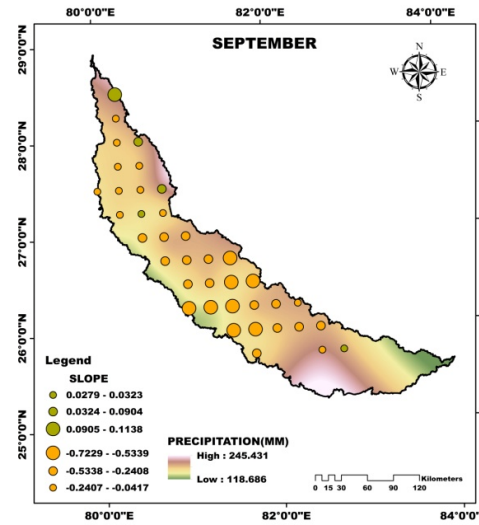
(g)



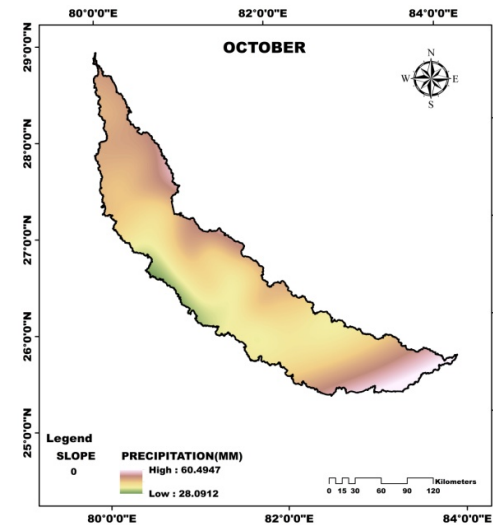
(h)



(i)



(j)



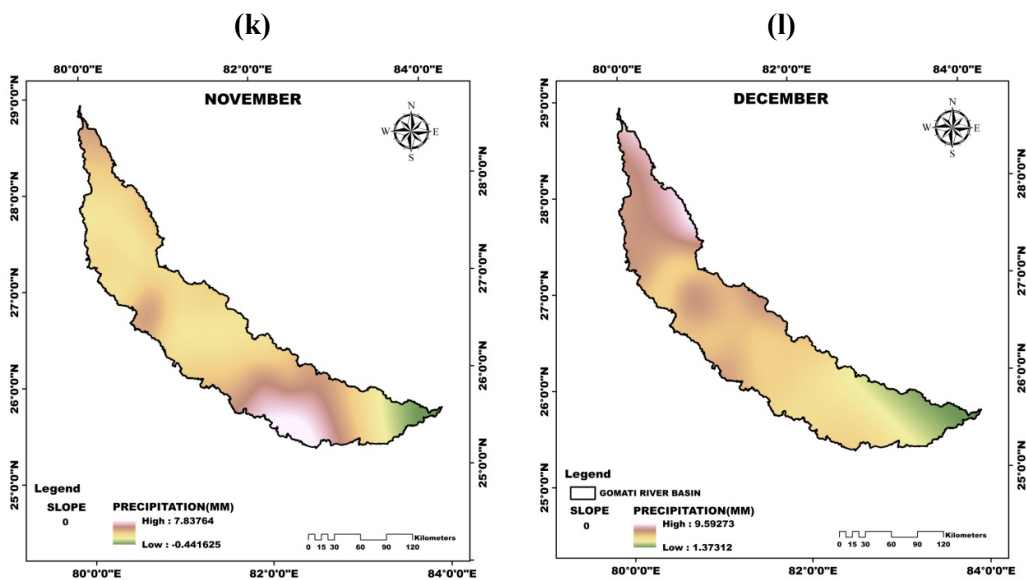
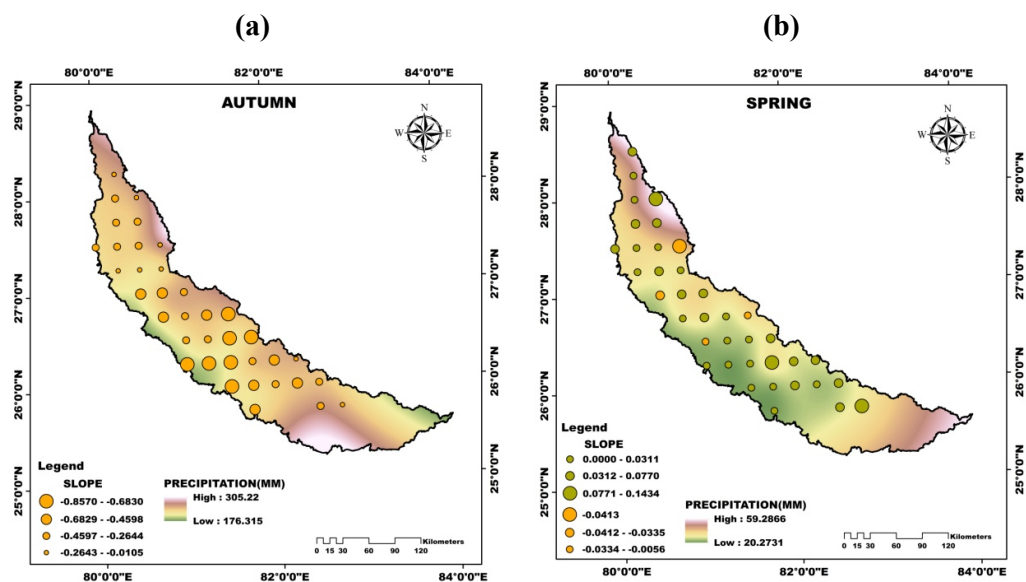


Figure S1. Spatio Temporal trends in the total precipitation for different months (January(a)–December(l)). The figure provides the Sen slope of the trend in each grid, which has significant trends.



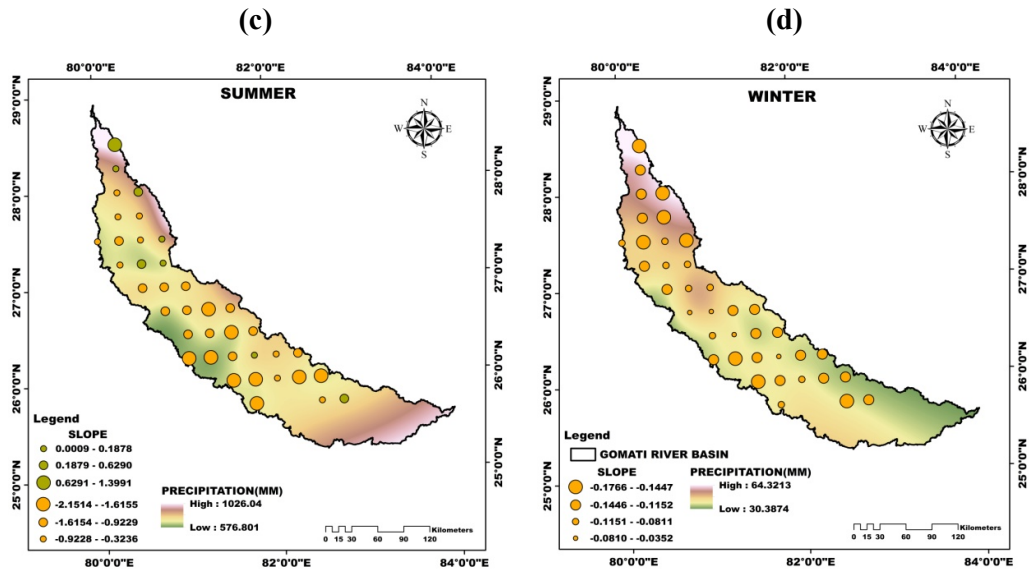


Figure S2. Spatio Temporal trends in the total precipitation for different seasons (Autumn(a)–Winter(d)). The figure provides the Sen slope of the trend in each grid, which has significant trends.

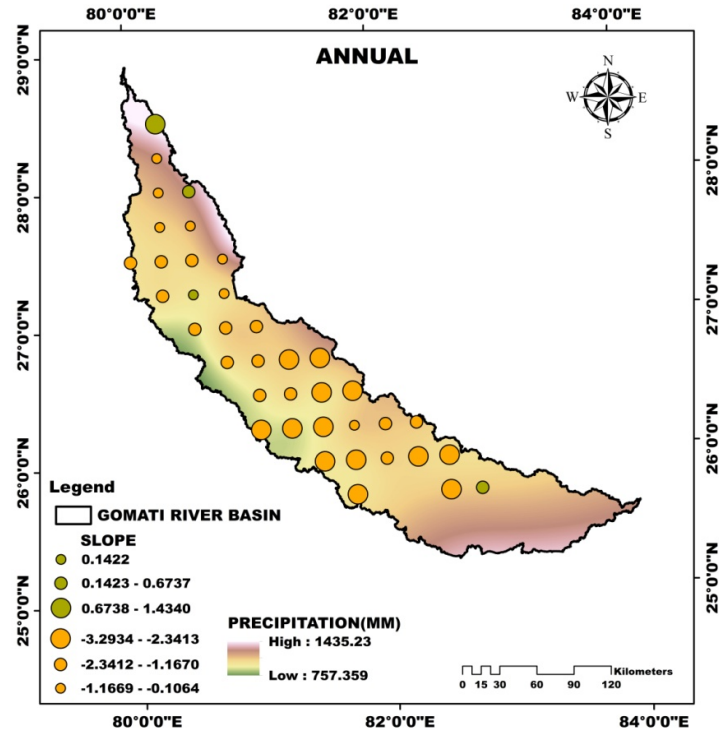
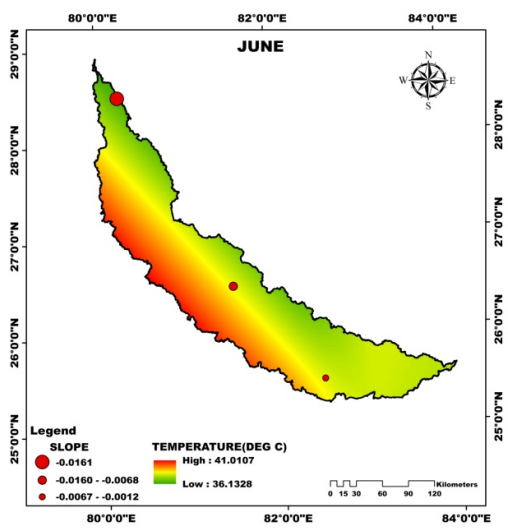
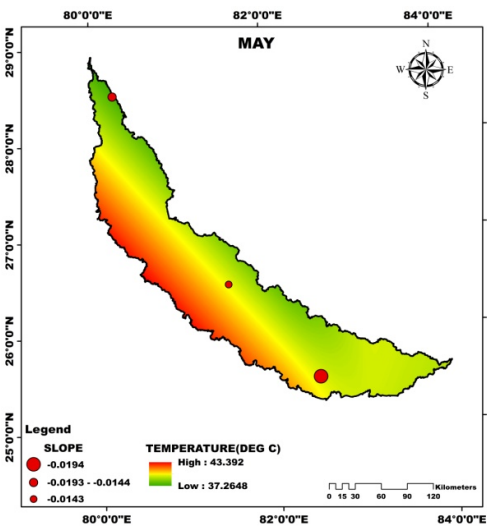
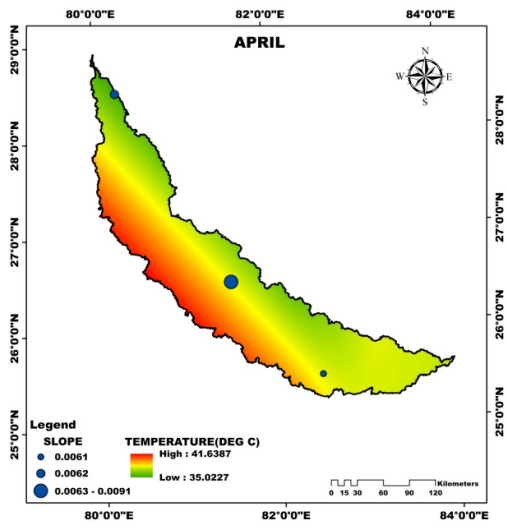
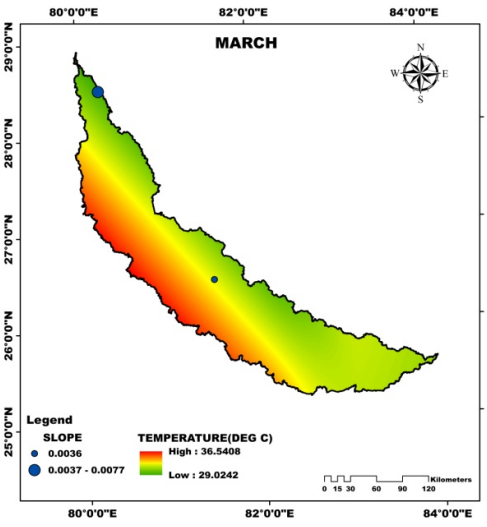
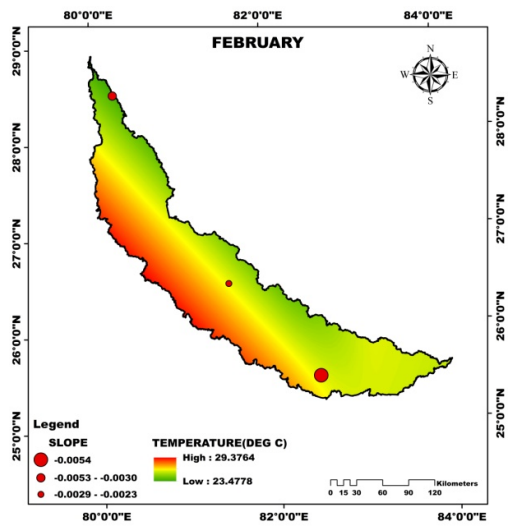
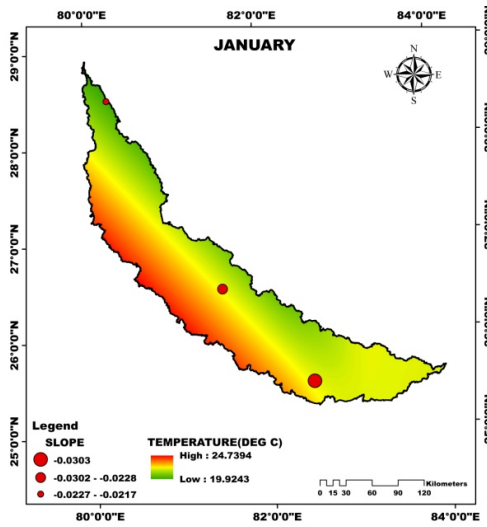


Figure S3. Spatio Temporal trends in the total precipitation for annual time scale. The figure provides the Sen slope of the trend in each grid, which has significant trends.



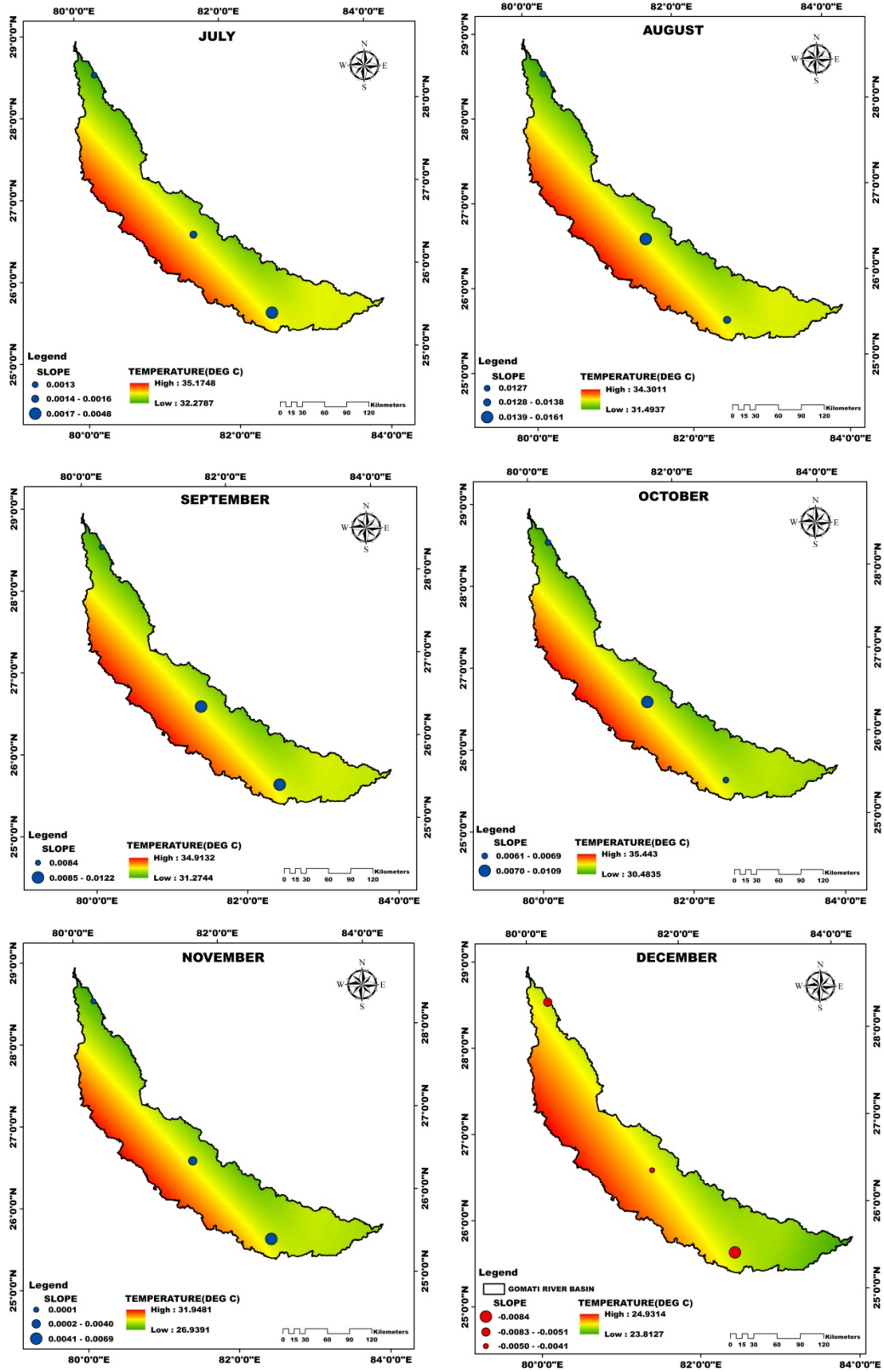


Figure S4. Spatio Temporal trends in the total temperature (MAX) for different months (January–December). The figure provides the Sen slope of the trend in each grid, which has significant trends.

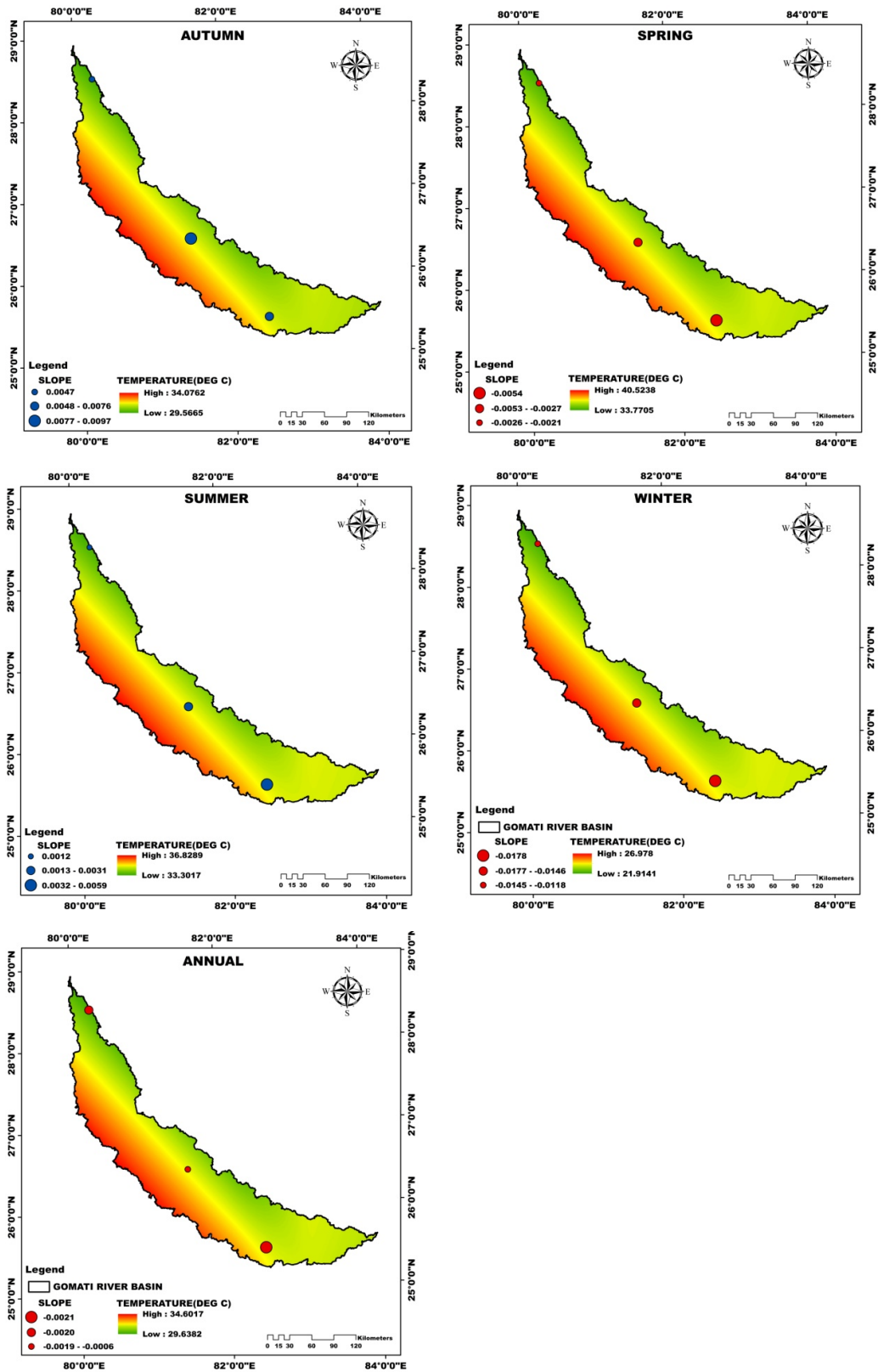
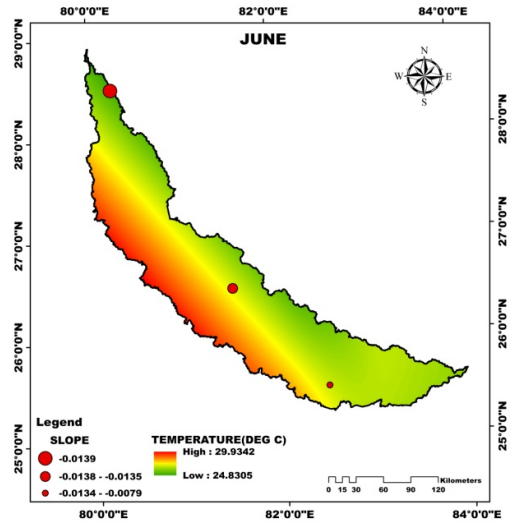
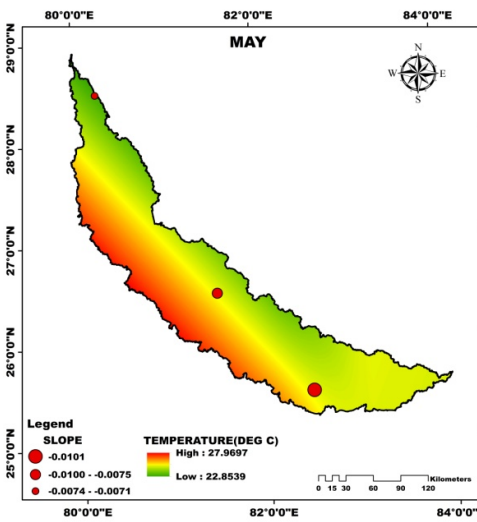
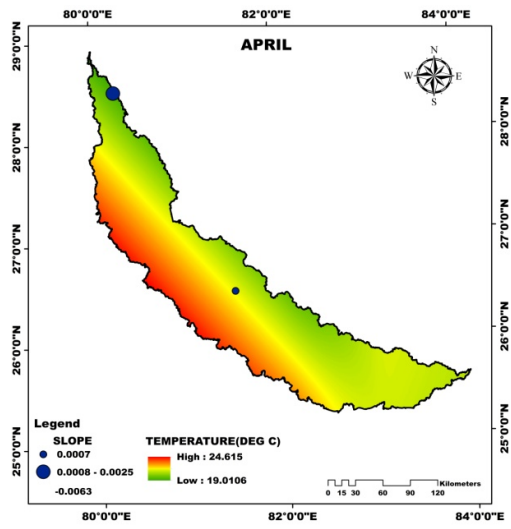
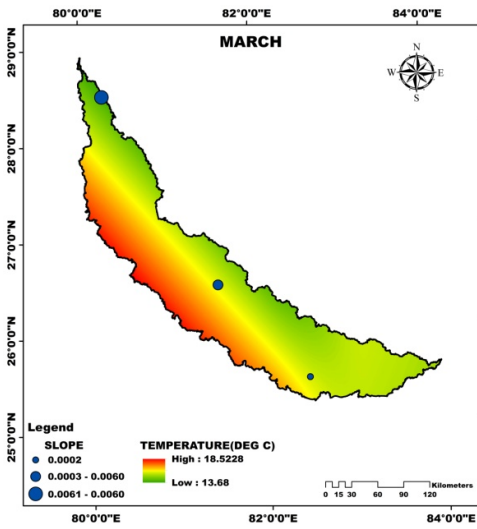
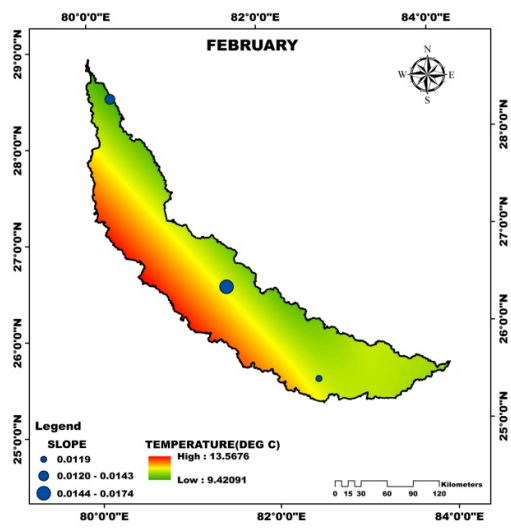
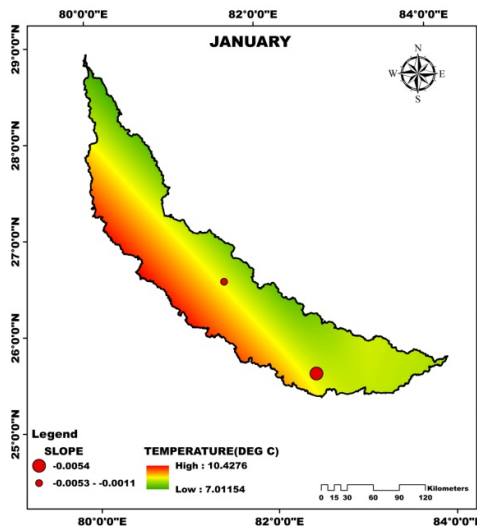


Figure S5. Spatio Temporal trends in the total temperature (MAX) for different seasons (Autumn–Winter) & Annual time scale. The figure provides the Sen slope of the trend in each grid, which has significant trends.



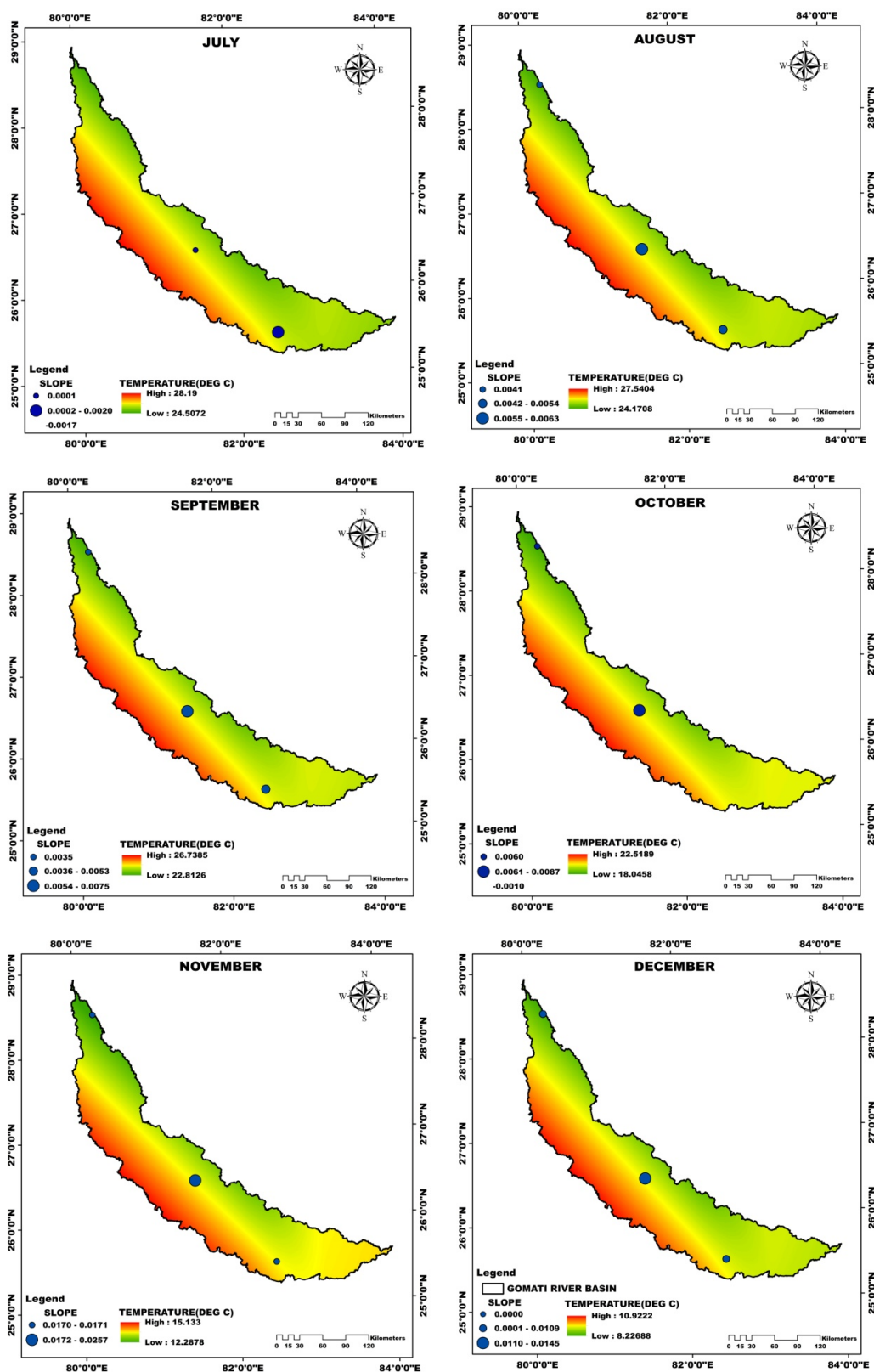


Figure S6. Spatio Temporal trends in the total temperature (MIN) for different months (January–December). The figure provides the Sen slope of the trend in each grid, which has significant trends.

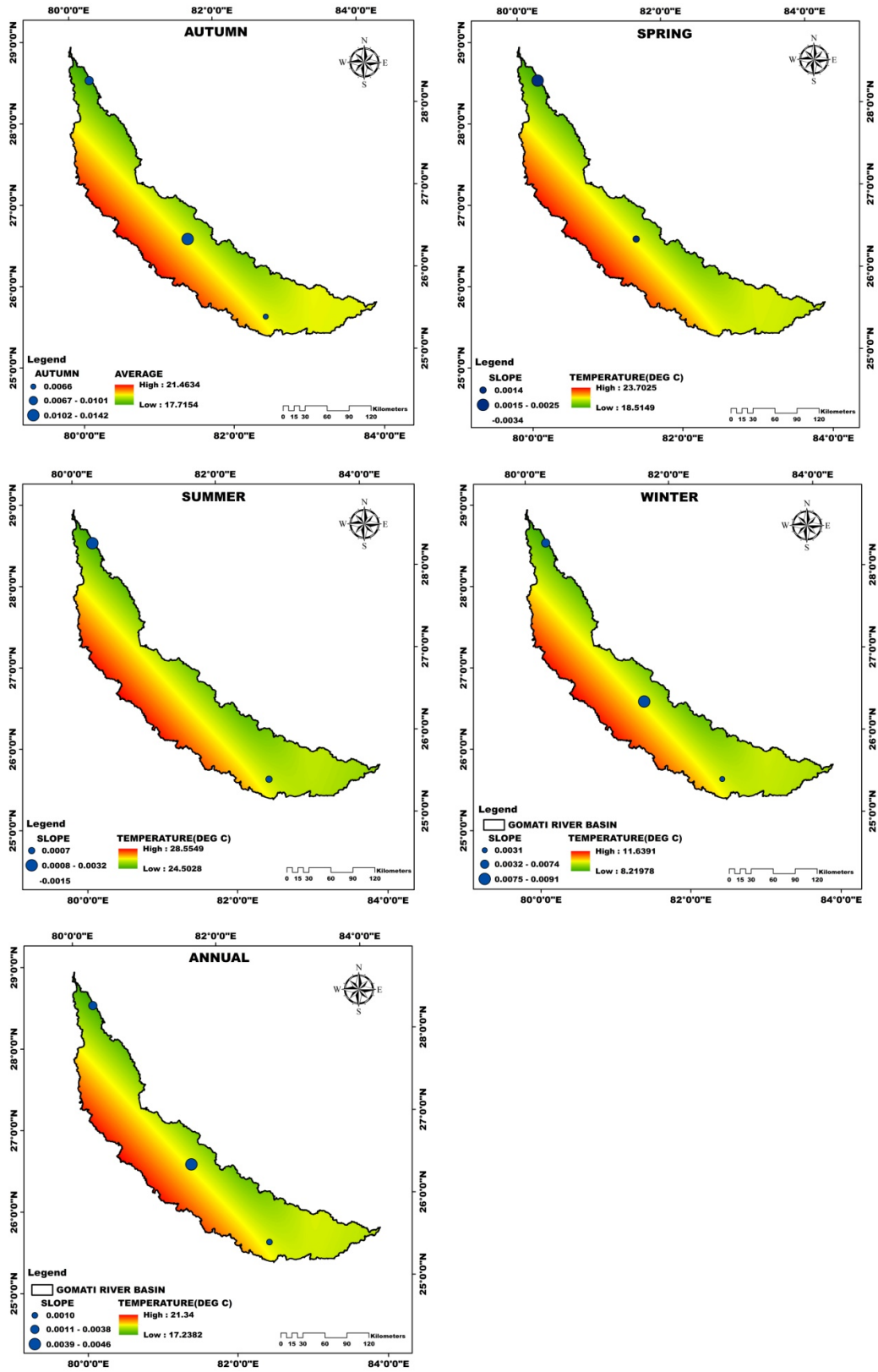
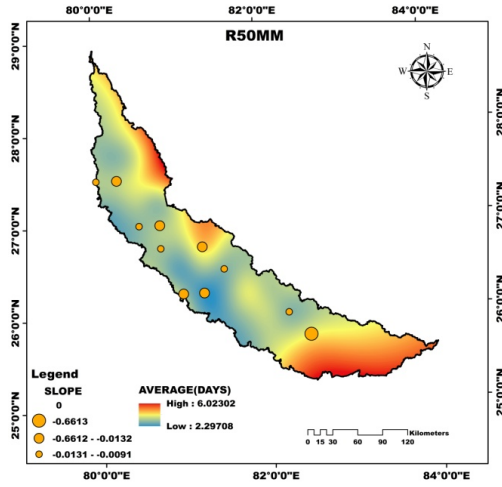
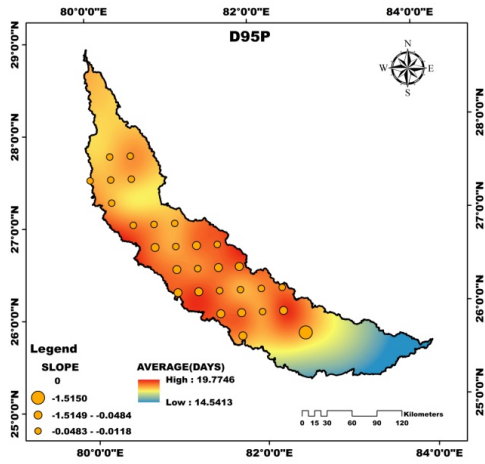


Figure S7. Spatio Temporal trends in the total temperature (MIN) for different seasons (Autumn–Winter) & Annual time scale. The figure provides the Sen slope of the trend in each grid, which has significant trends.

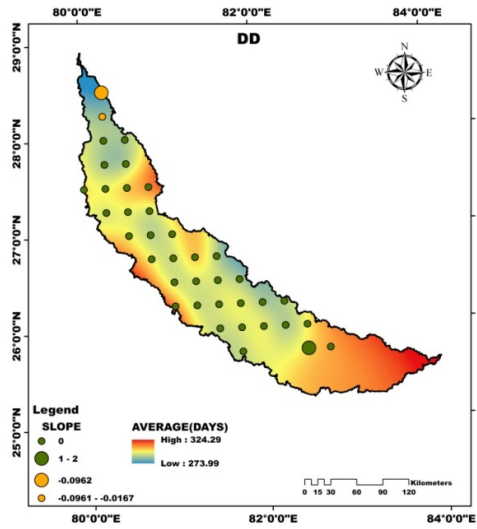
(a)



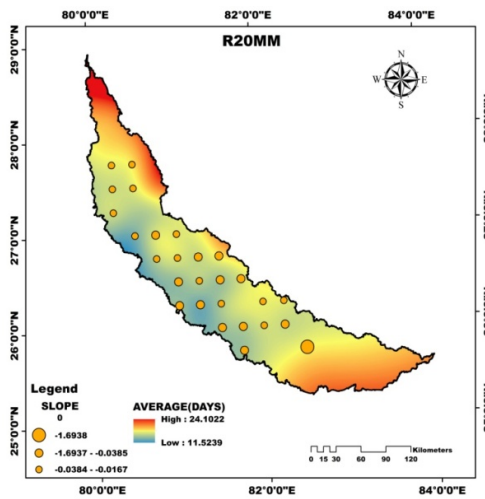
(b)



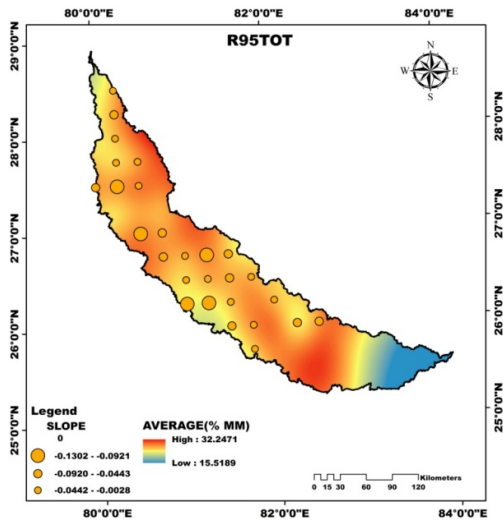
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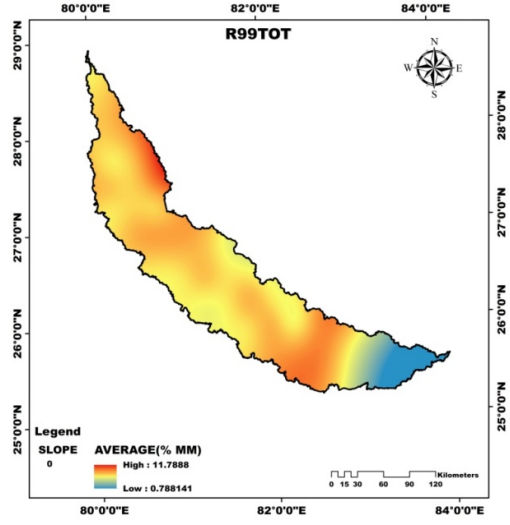
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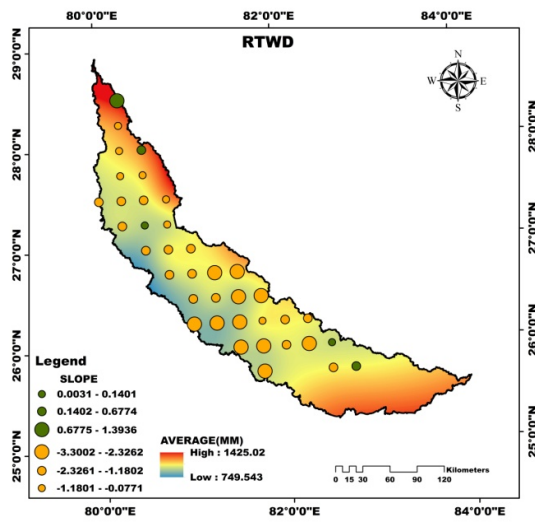
(e)



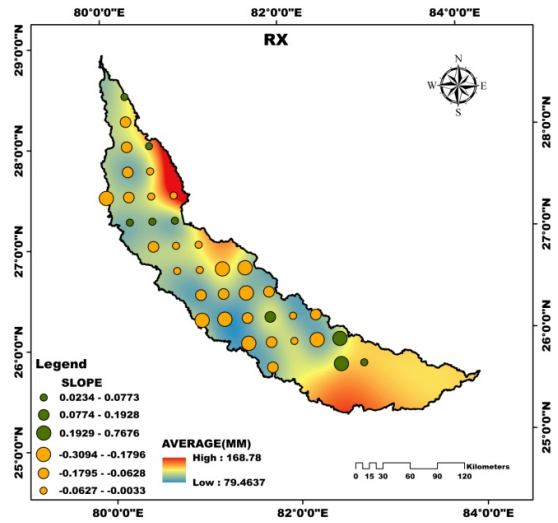
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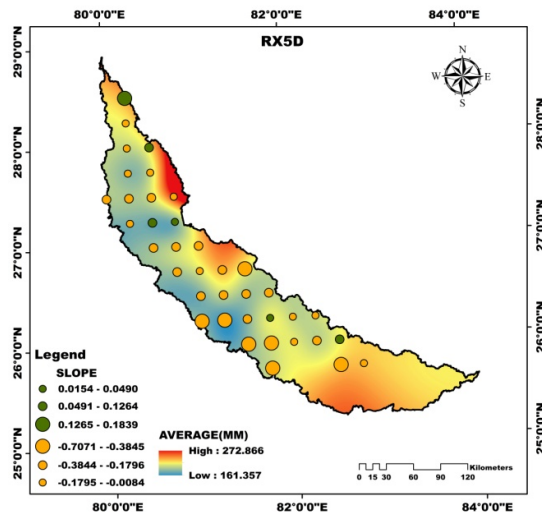
(g)



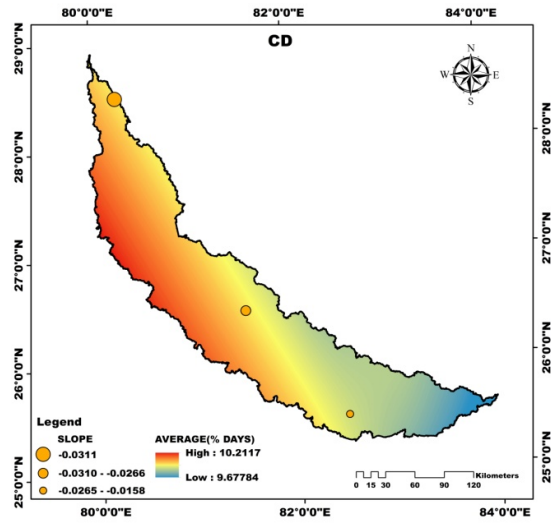
(h)



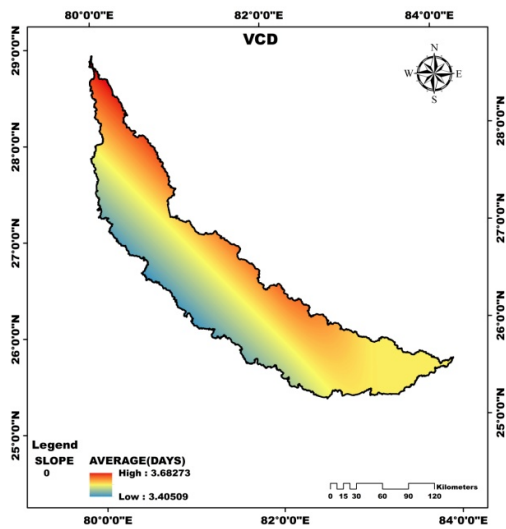
(i)



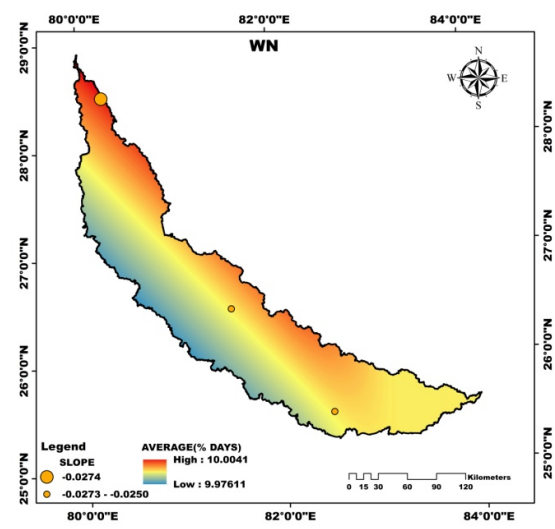
(j)



(k)



(l)



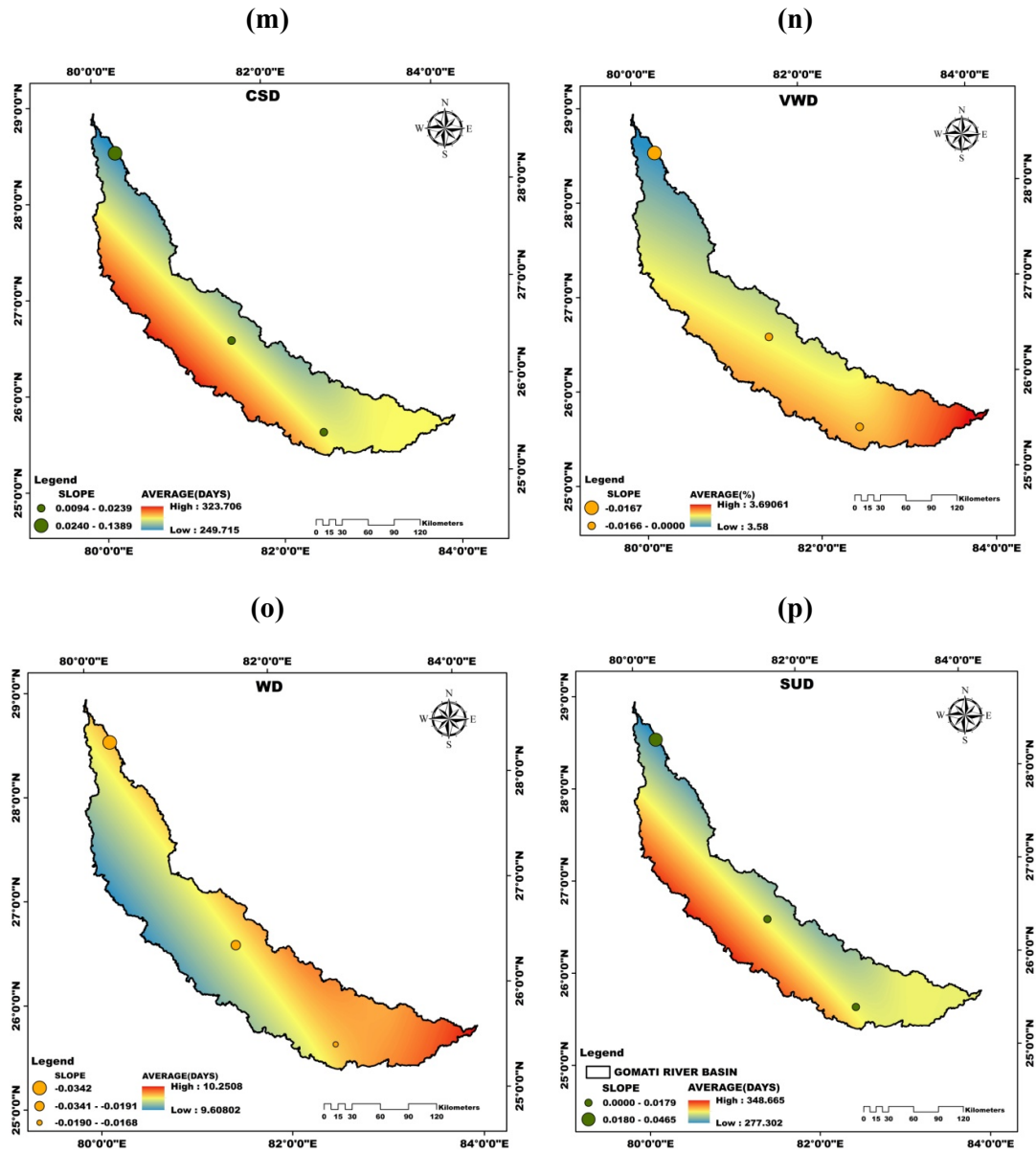
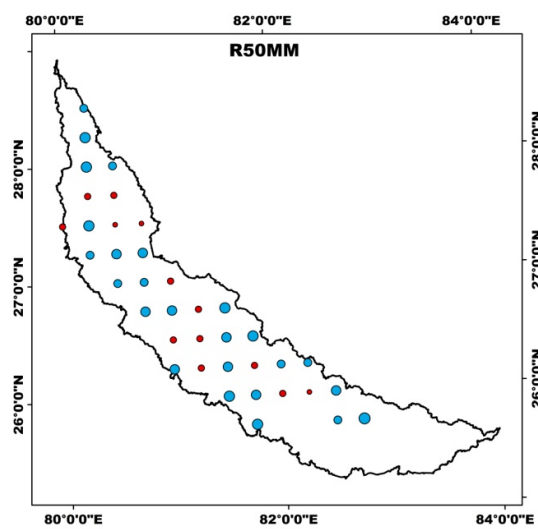
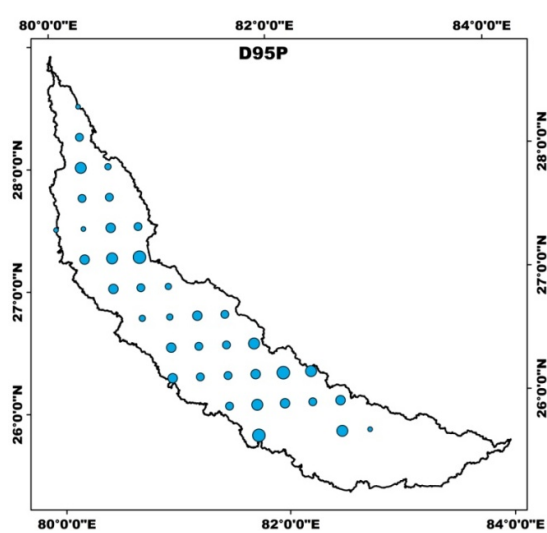


Figure S8. Spatio temporal variation of all the 16 extreme climate indices over the basin.

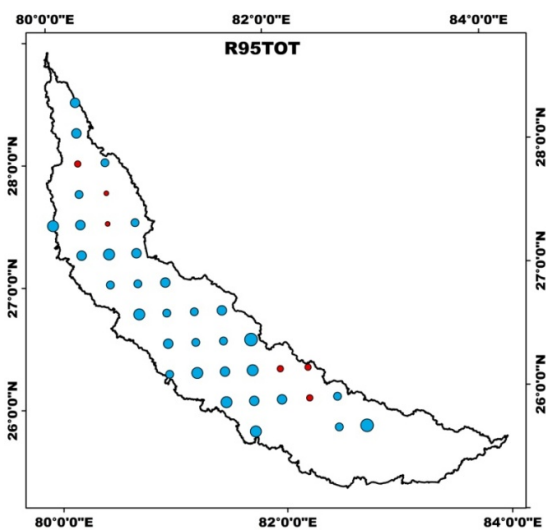
(a)



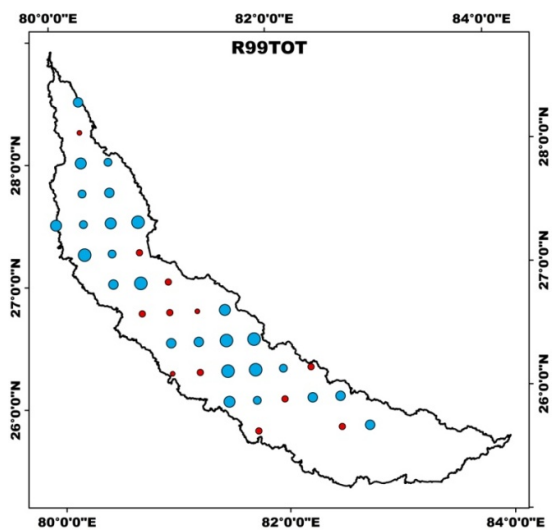
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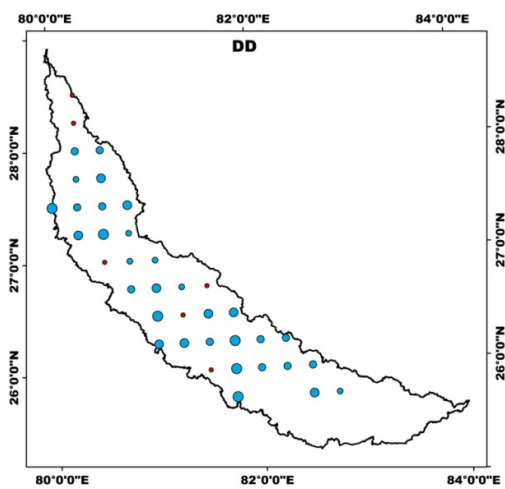
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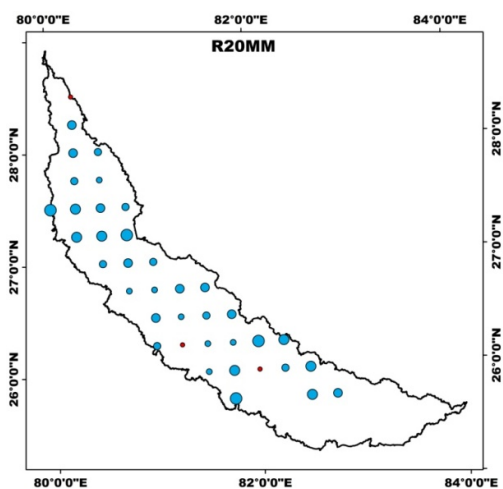
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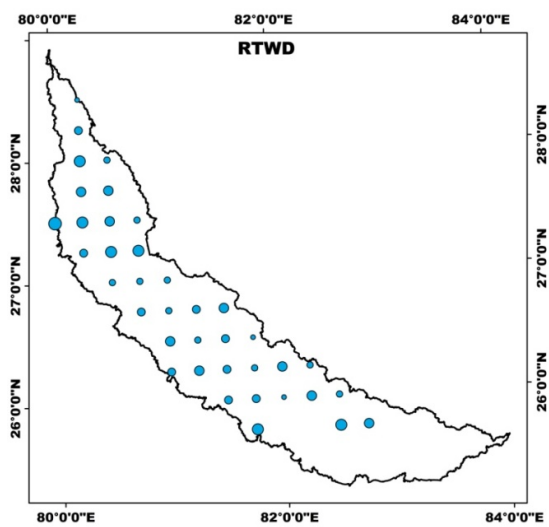
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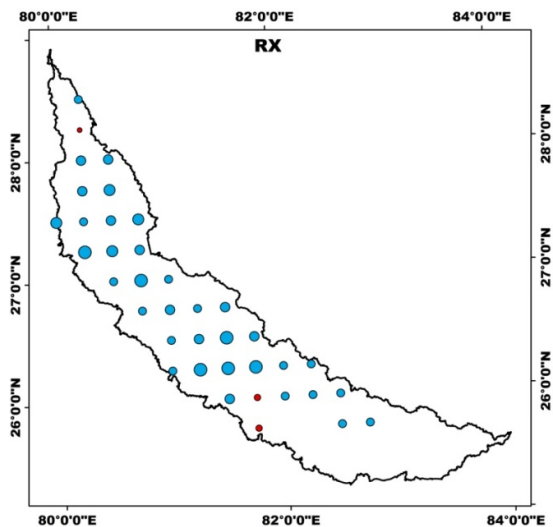
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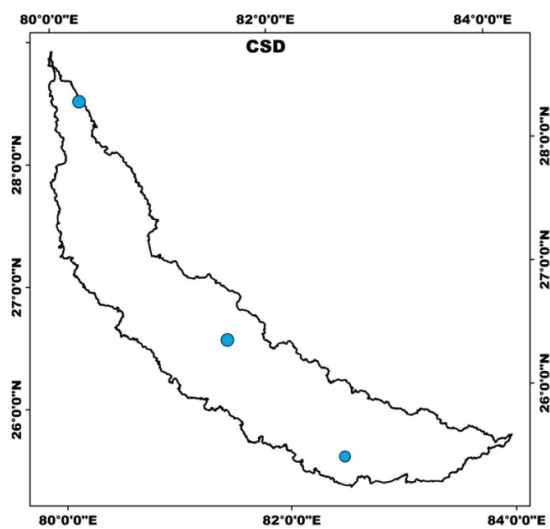
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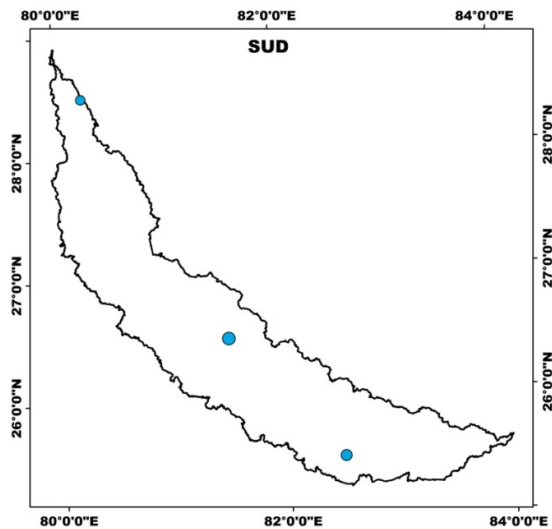
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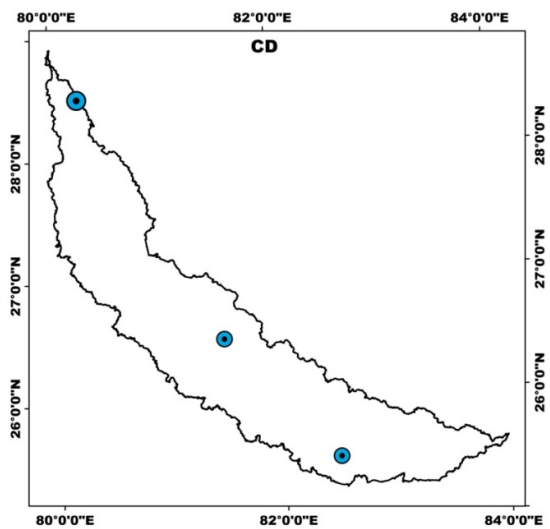
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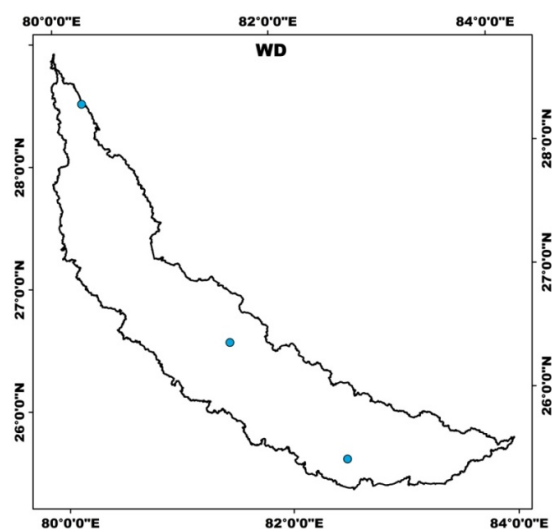
(j)



(k)



(l)



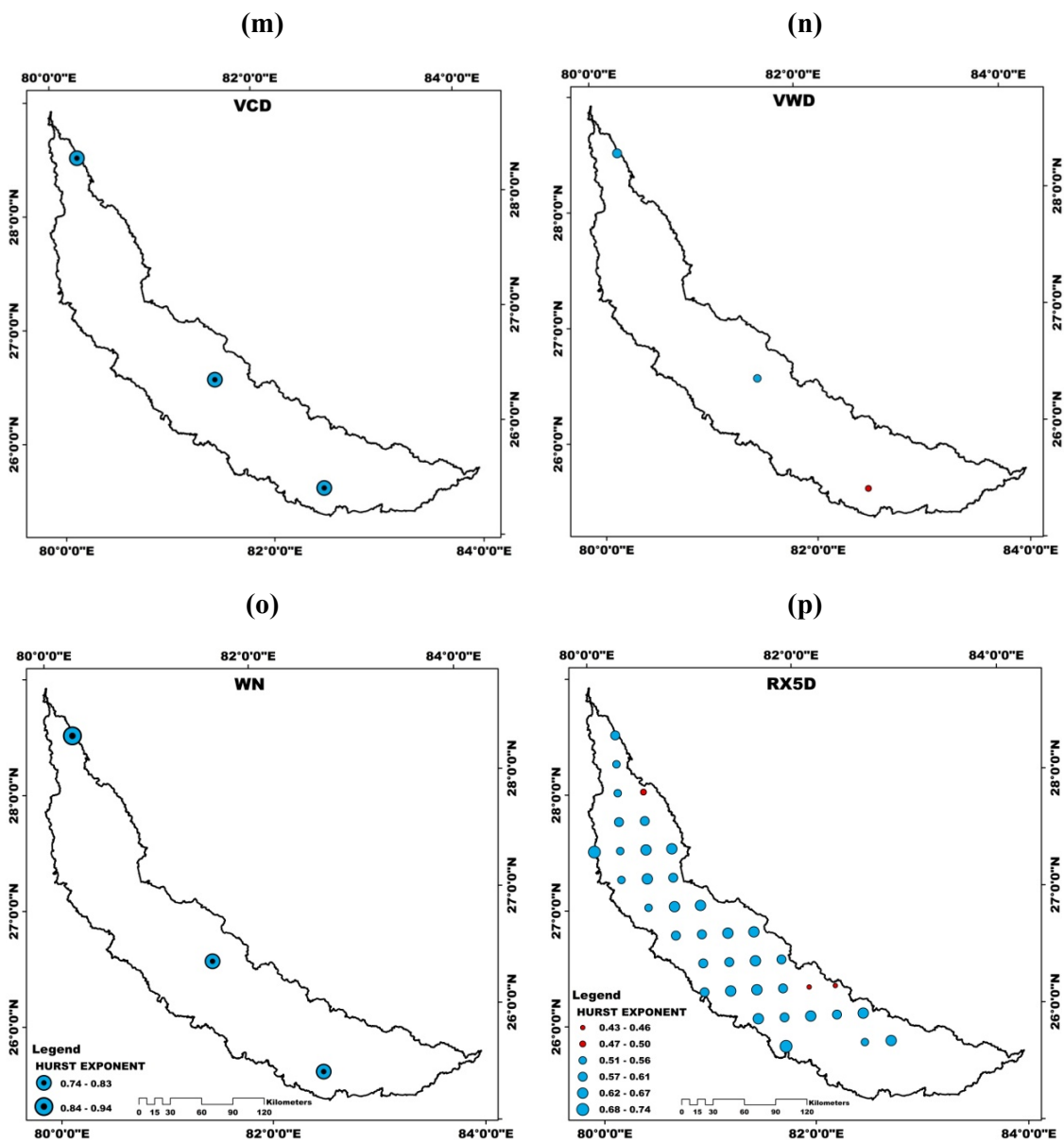


Figure S9. Spatial distribution map of all the 16 extreme climate indices based on the Hurst exponent.