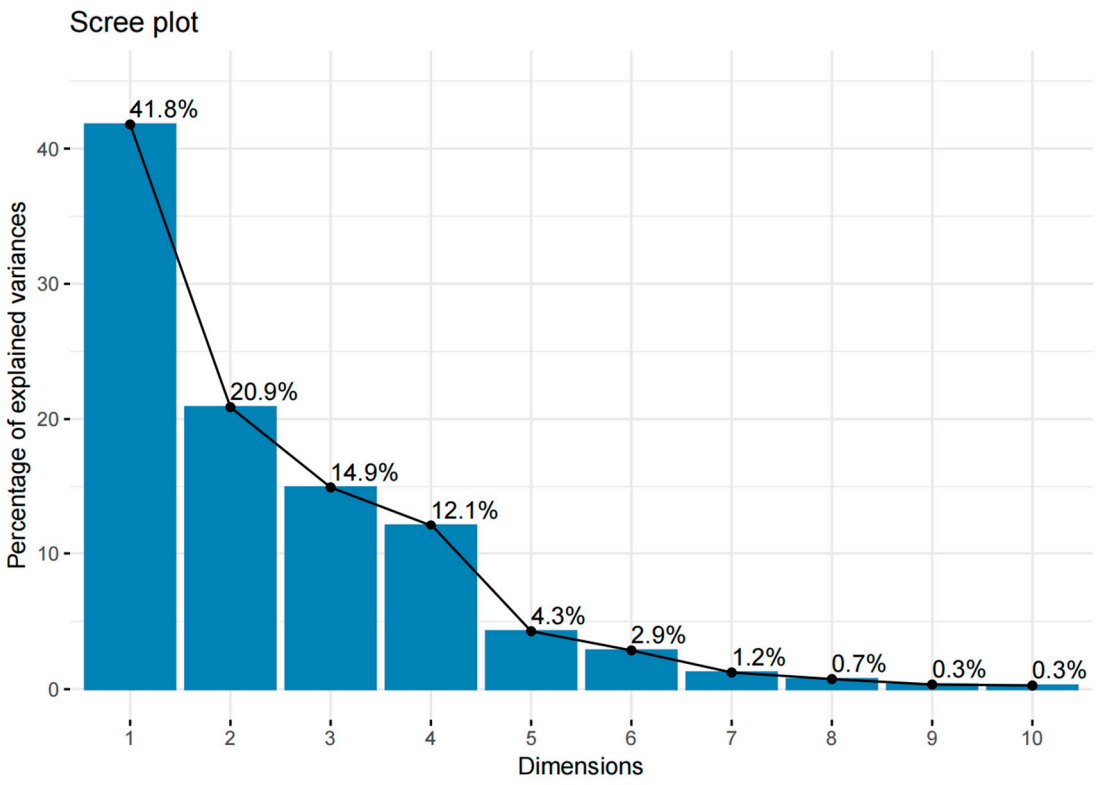
The Principal Component Analysis (PCA) process and the Pearson correlation coefficient (r) were used to select a subset of the environmental variables.

In this study, we adopted a PCA strategy proposed by Guisan et al (2017) to visualize the correlation between the variables and identify the main environmental gradients in the region to be used in the modeling process.

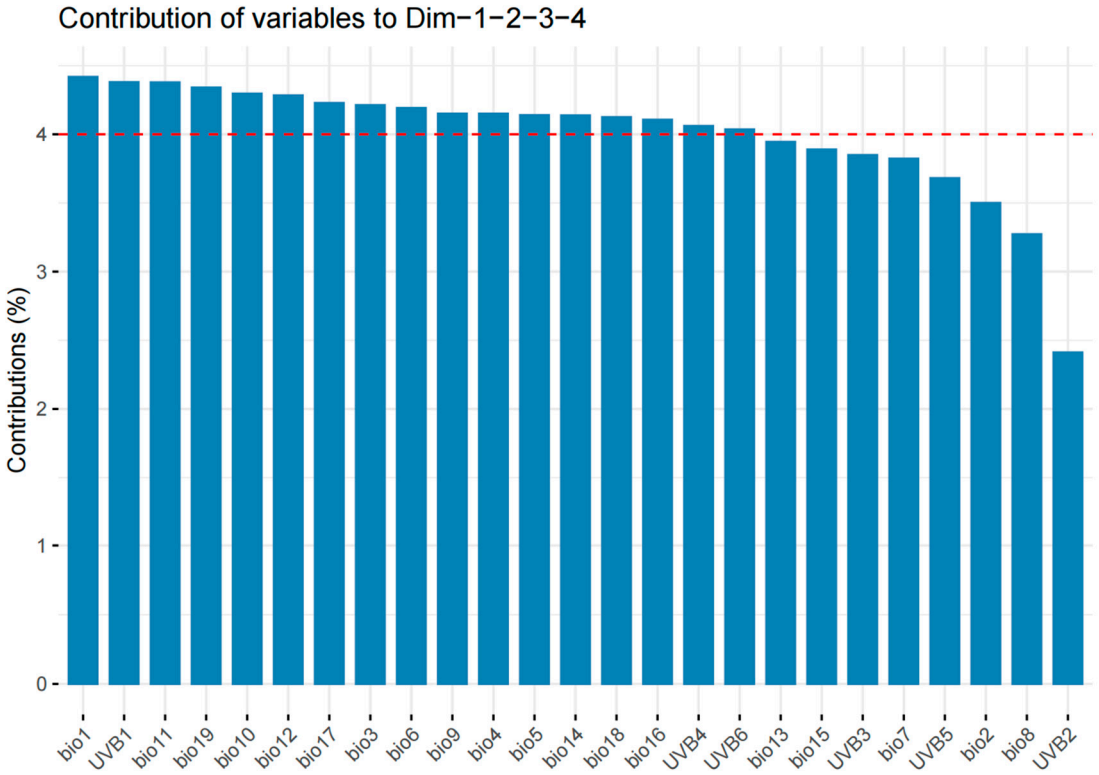
Climate Variables

First, we used all 25 climatic variables (19 bioclimatic varibales and 6 UV-B radiation variable) to perform the PCA and retained four principal component axes to summarize the whole environmental space.



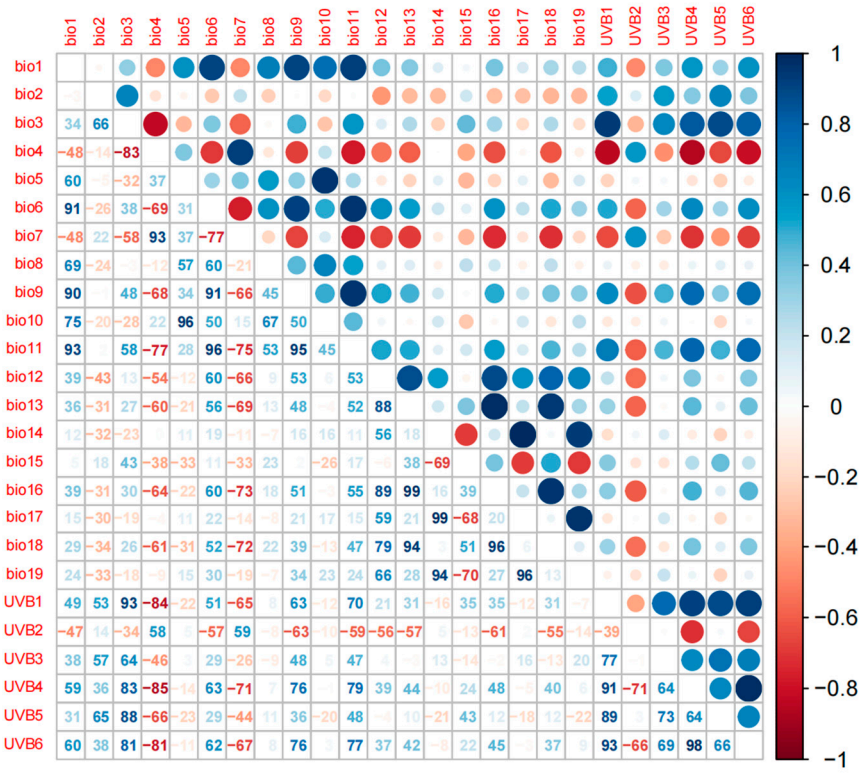
Scree plot of climate variables to determined the retained principal component.

Second, we calculated the contributions of variables in accounting for the variability in the four given principal component are expressed in percentage.



The contributions of climatic variables in accounting for the variability in the four principal components. The red dashed line indicates the expected average contribution. For the given components, a variable with a contribution larger than this cutoff could be considered as important in contributing to the components.

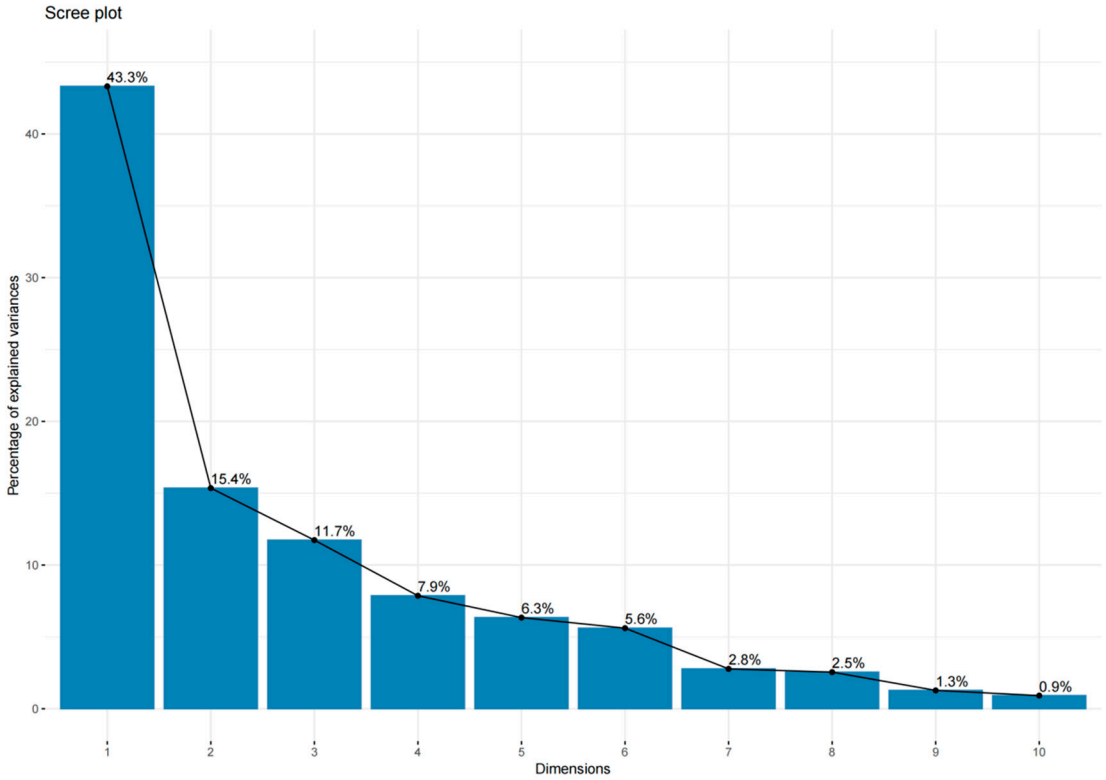
Third, we used the Pearson correlation coefficient (r) to examine the cross- correlation of these 25 variables, and then retain the one with the greater contribution in the four principal components.



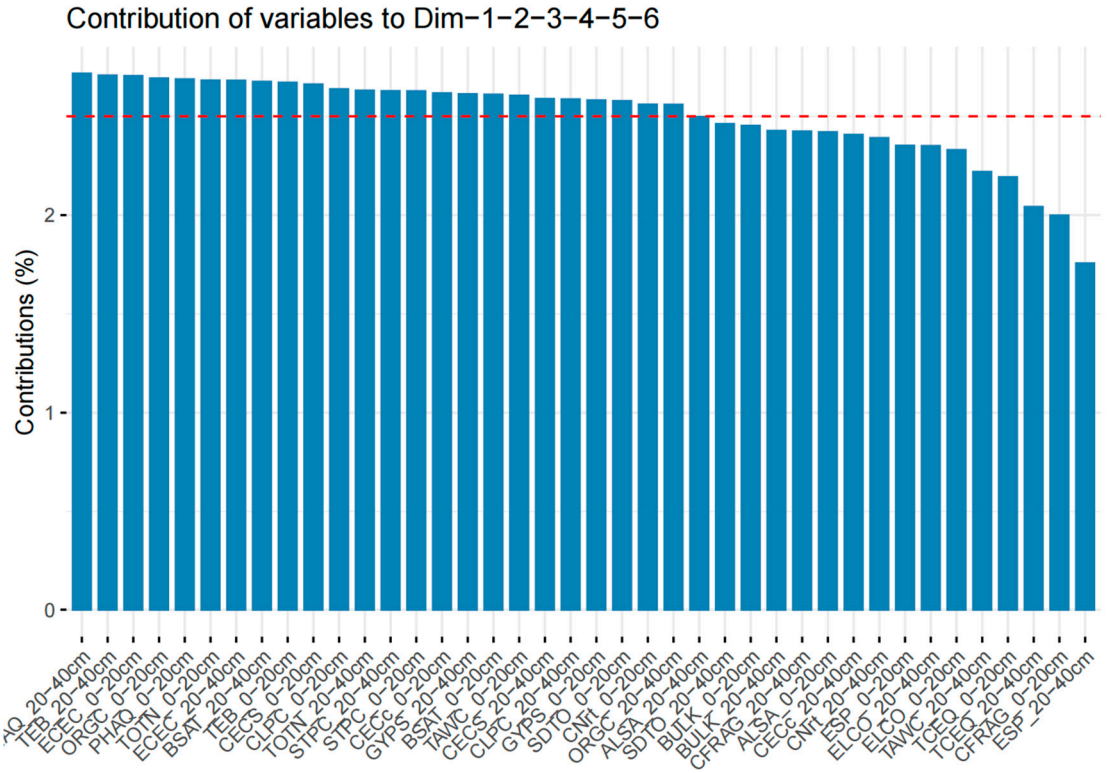
The Pearson correlation of 25 climatic variables.

Soil Variables

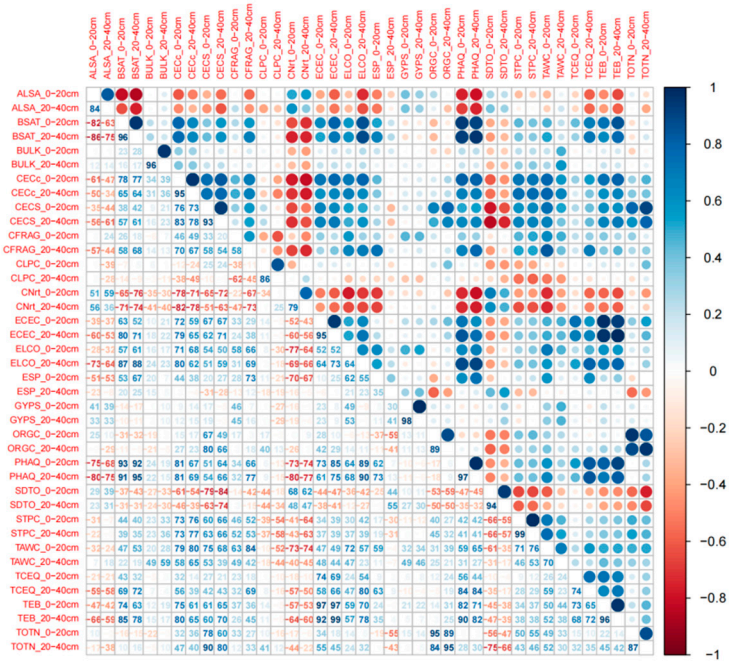
The analysis steps are the same as climate variables.



Scree plot of soil variables to determined the retained principal component.

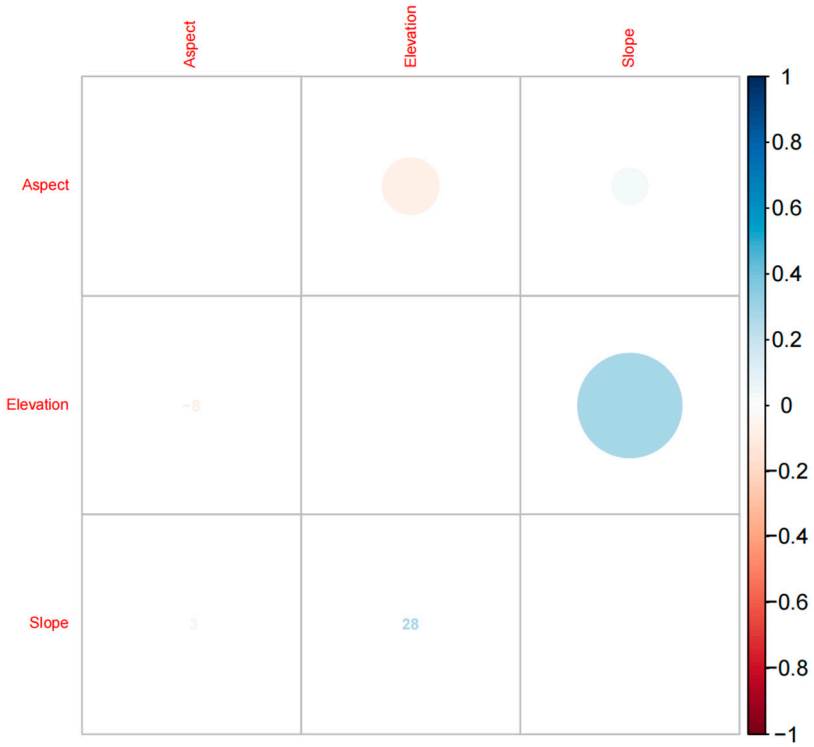


The contributions of soil variables in accounting for the variability in the four principal components.



The Pearson correlation of 40 climatic variables.

Landscape Variables



The Pearson correlation of 3 topographic variables.