

EVALUATING THE INFLUENCE OF BIOCLIMATIC VARIABLES ON THE POTENTIAL DISTRIBUTION OF ALLIUM CEPA IN THE PHILIPPINES

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Anthropogenic climate change is projected to alter the geographic distribution of crops. However, there have been few studies modeling the impact of climate change on the distribution of crops. Detailed and reliable information about the potential distribution of crops could provide important information that could help to evaluate the impact of climate change and can be used as basis in formulating appropriate science-informed adaptation policies, strategies, and measures. This study identified the key variables highly correlated with the distribution of economically important crop in the Philippines: *Allium cepa*. Maximum entropy approaches using the Maxent modeling algorithm was used to predict the potential distribution of *Allium cepa* under two emissions scenarios (A1B and A2) for the year 2030, 2050 and 2100, using the occurrence records from the Philippine Statistics Authority and bioclimatic variables with 30 resolutions from World Clim datasets. The relative importance of the environmental variables was evaluated using Jackknife tests. The robustness of model predictions was evaluated using the AUC statistics. The results showed that the more influencing variables are temperature annual range and precipitation seasonality. The model performed better than random with an average test AUC value of 0.64. It is forecasted that *Allium cepa* will likely benefit from the future climate.

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