Abstract

Attempts to predict food availability in the future around the world can be partly understood from the impact of changes to date. Although yields are only one part of food system, changes in the global crop yields is one of the important drivers of food security. Weather extremes, especially droughts have significant adverse impacts on agriculture hence on food security. At the first part of this study we investigate global extreme droughts in order to find their spatial and temporal pattern. Then, using multiple linear regression (MLR), the relationship between the crop yields data of most of the global countries and some major climatic indicators including ENSO, drought, geopotential height (GPH) and annual average CO_2 has been examined. The Palmer Drought Severity Index (PDSI) is applied to quantify the severity of droughts. In order to investigate the impact of technology enhancement, time-trend as a relatively reliable approximation of technology measurement is implemented. Some countries showed no relationship to these variables, however, results demonstrated that historical crop yields data of most of them can be explained by these indicators.