Climate Constraints and Assessment of Food Security
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n the recent years, inconsistencies, of weather, like drought, have caused a number of shortfalls in the world grain production, which is a main staple food and feed. These shortages had pronounced negative impacts on food supply and demands, leading to food shortages. At the background of growing world population, these shortages raised serious concerns about food security. So based on this explanations, two main objects are going to study, food security and drought as the main climate constraint which influences it. So, to reach this goal, it is necessary to get familiar with some definitions and gain some skills. Briefly, in the following the main steps have been discussed:

At the first step, some concepts should be discussed to gain a general idea about the issue, including food security, climate change, drought and extreme precipitation and different indices to measure them. The next step is gaining some skills in order to measure and model drought in a specific region (for example California) during a specific period (for example in the last 3 decades), so the following steps should be taken:

a- Getting data (precipitation data from data sources like USGS)

b- Data analysis (with software like MATLAB and Excel), in this step some methods like time series analysis will be discussed.

c- Data mapping using ArcGis, in this part some basic concepts of ArcGIS are taught. At the end of this part the student has this ability to map data like precipitation on ArcGIS and does basic calculations by using this software.

In the next step, some basic concepts of remote sensing and application in drought monitoring are discussed. At the end of this part, the student has this ability to download a remotely sensed image (for example from USGS) and import that into ArcGIS and does basic calculation of the image in ArcGIS.