**Assessment of seasonal patterns in crop rotation with Google Earth Engine**

Submitted by

**Mustafa Kamal Shahadat**

Student ID: 2965623

Define the study area (use the shapefile provided to define the study area of Castilla  
La-Mancha)

• Add the time series: The script provided uses MODIS data but the student can adapt  
the script to Landsat data if the agricultural plots are very small

• Estimate the spectral metric used as ecological indicator: The script provided estimates  
the vegetation index NDVI but the student can consider other metric based on their  
knowledge of the study area.

• Estimate the trend and evaluate if it is necessary to detrend the time series (add a map  
of the trend in the report indicating maximum, minimum and mean values)

• Define the harmonic function.

• Estimate the amplitude of the phenological cycle (add a map of the amplitude in the  
report indicating maximum, minimum and mean values)

• Estimate the autocorrelation function. Select the most appropriate lag to be considered.  
(Add the maps of the autocorrelation values at the selected lag)

• Combine the different seasonal metrics to identify and map different crop rotations.

• Display a map with the result and some examples of time series of the different classes.

• Repeat the same step choosing an agricultural area in Bangladesh.

• Describe the different crop rotation systems found and the differences between study  
areas.

• Include the script(s) used in the assessment report.