MSDS 674 – Project Outline – Jeremy Beard – 13 August 2023

I. Problem statement

The problem I seek to solve is a problem related to food availability and general hunger levels across the United States, and maybe even the world. I want to explore the level of food affordability, food availability, and hunger by using various datasets in ArcGIS Pro. Eventually, I'd like to concentrate on the top 5 or top 10 hungry areas in the USA or world to recommend to an organization such as the Peace Corps or other helpful organization. Directing a beneficial organization's attention to hungry areas of the USA or world will be the ultimate focus of this project.

II. Specific objectives, study area and data layers

The objectives of my analysis will be centered around food accessibility in the USA or world. The questions that will be answered in my analysis are: where in the USA or world is the level of hunger the highest? Where in the USA or world is food or water availability the lowest? Where in the USA or world are people not able to find their basic needs met? This analysis will be a study of food availability and affordability across the USA or world.

The approaches and tools I will utilize in this analysis will be centered around ArcGIS Pro, possibly with some Python analysis as well. I'm looking to find specific datasets to use as layers which represent this type of low food accessibility data I'm trying to find. These datasets or layers will be found and modeled. It's not entirely clear right now exactly which geoprocessing tools will be used but geoprocessing operations will be implemented in order to make the analysis as clear as it can be.

III. Methods, techniques, and assumptions

Data for this project will be acquired either from the ArGIS Living Atlas of the World, or another esri data source. Alternatively, there may be datasets available on other public sites like Kaggle which may be of use. All of these will be explored! Pending those searches, there may need to be data sourced from other sources as well.

The methods and techniques used in this analysis will vary and are not set in stone by any means, but may include different geoprocessing tools such as Feature Class to Feature Class in order to import shapefiles, exporting or importing layers and setting metadata, or more. There may be a lot of data cleaning operations involved based on the organization or cleanliness of the data. There will definitely be other methods or techniques approached as the analysis begins.

IV. Expected outcome(s)

Describe the intended products/outcomes of the project. The results can be maps, apps, findings, procedures, algorithms, or any combination of things.

The intended or expected outcomes of this project will be map-centric. As this project is centered around food accessibility, food affordability, and hunger levels, the specific objective outcome of this analysis is a map which displays this information in a clean and useful way. There may be other procedures which get developed during this analysis that become by-products or additional outcomes, but these are not the specific focus of the analysis. Primarily, the analysis will intend to create a visual representation of hunger and food accessibility in the form of a cartograph in ArcGIS Pro.

V. Limitations

State the anticipated limitations of your project and why.

The anticipated limitations of the project are based on the availability of the data needed to perform the analysis. There are not expectations that data will not be available, but this is a possibility.