**Client Description And Their Ask Of Us**

Our client is the Global Footprint Network (GFN), a local nonprofit that has established a sophisticated global accounting system for the Earth’s carrying capacity and mankind’s consumption demands on that capacity. In their on-going efforts to make their accounting system more understandable to the public and policymakers GFN has developed a new dataset, the Consumption Land Use Matrix or “CLUM,” that provides a more readily understandable set of consumption categories than their original dataset (the National Footprint Accounts, or “NFA”). For example the public-facing data from the NFA report out the total equivalent of “Grazing Land” or “Carbon” consumed in a given country in a given year. The CLUM provides an accounting system that uses the more-easily understood consumption categories of “housing,” “food,” and “services.”

We will address two problems that GFN currently faces with the CLUM data. The first is that the dataset conflicts with the NFA. While GFN is aware that the data conflict, they have not systematically examined the conflicts in order to understand where the conflicts are large, or where there are patterns. The second problem is that there is no method for measuring the efficiency or intensity using the CLUM categories. A country could have a very low level of consumption of housing, for example, but it is currently unknown whether this is the result of extremely poor-quality housing (as might be expected in Sierra Leone) or because the country provides quality housing through extremely efficient, low-intensity means (as might be expected in Singapore). GFN uses the UN Human development Index as a means of normalizing a country gross consumption, but does not have an equivalent index for its 5 CLUM categories of consumption.

**Data & Methods**

GFN has provided our team with the latest version of the CLUM data as a large Excel file. We will explore these data using a wide variety of visualizations including scatterplots and proportional symbol maps. We will research indices to normalize the CLUM data using traditional scholarly research techniques including reviews of the literature and interviews with experts in international standardized data on the variables in question.

**Deliverables**

1. A series of visualizations with explanatory text describing various options for presenting the CLUM data, and noting cases where the CLUM results appear to diverge from the NFA results.
2. A proposed, sourced, set of normalization indices for the 5 CLUM categories
3. One or more visualizations of the normalized CLUM data.

**Timeline for project with deliverables, time/teammember**

All team members will work 13 hours per week on this project.

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|  | **Eli** | **Nat** | **Scott** |
| **Jan** | * Met with client, received dataset, discussed potential projects | | |
| **Feb** | * Goods Index Research * Services Index Research | * Housing Index Research * Transportation Index Research | * Initial visualizations * Food Index Research |
| **Mar** | * Further visualizations | * Further visualizations | * Government Index Research * Gross Fixed Capital Formation Research |
| **Apr** | * Final report writing, final visualization tweaking | | |
| **May** | * Final meetings with client and presentation to class | | |

All deliverables will be presented to the client in late April.

**Fallback position**

There may be no comprehensive measure of efficiency or intensity across all 140 countries and regions for the CLUM categories. In this case our objective is to document our findings fully and propose a next-best solution.