**Laura Brown**

**Data source:** 2009 Kenyan Census: Households By Main Source of Water, County Estimates and Main Source of Water by Subdivision

**Mapping Scenario:**

The non-profit Universal Water has commissioned a spatial analysis of the variety of water sources in Kenya. This non-profit works with governmental agencies to preempt and respond to water crises (including drought, bioterrorism and natural contamination, commercial exploitation), and provides suggestions concerning adequate sanitation services. This report interprets 2009 census data in order to identify varying water sources and geographically specific needs. Such examples include an analysis of urban areas, an estimation of poverty correlations, and the assessment of water security based on natural and commercial sources. Such an analysis will result in policy recommendations, for targeted improvements in water services will depend greatly on geographical locations and existing infrastructures. Findings will also help examine existing natural reserves of water, and will help determine which areas are most at risk to potential threats of various categories.

While existing maps (including Kenya Groundwater Mapping Programme, under the auspices of UNESCO and Kenya’s Water Ministry) have made pathways into more egalitarian and universal access to water and safer environmental practices, this map will be one of the first to involve dynamic, scrollable widgets. By illustrating various types of water sources, it is expected that geographic patterns will be more evident, and a more dynamic maps will provide greater utility for the event of a water crisis. Areas of noticeable variability will be compared with more detailed subdivision data, also garnered by the 2009 census. The goal of this project is, therefore, to create web-based interactive maps for the range of water sources for Kenyan households.

**What do I want to get out of this project?**

- A user-friendly interface that visually represents the data in a clear way and that allows for user selection of data according to source

**What do I want the users to get out of it?**

* See a series of maps according to water source type (Pond/Dam, Lake, Stream, Spring/Well, Piped into Dwelling, Piped, Rain)
* Understand geographic relationships between water sources, natural bodies of water, urban/rural context, and developed/underdeveloped areas.
* Understand specific types of vulnerability in terms of area and type of water source.
* Possibly make assessments of vulnerable populations (slums, refugee areas, etc.)
* Identify areas to target for specific sanitation measures (ranging from increased piping options to areas of high running water in dwelling for fluoride and other medicinal treatments).
* Possibly assess state of development, of gains and shortcomings, and of potential target areas for urban and suburban areas of development initiatives.

**Content requirements:**

* Data displayed on basemap that includes Kenya’s counties and natural bodies of water.
* Multiple layers are available for users to view via scrollbar
* County-wide information presented to user in infobox
* Population information available in popup or hover
* Legend will inform users of contents
* Information about recent water issues and/or current events of importance
* Link to Kenya Data and spreadsheet to download
* Data also available in a chart or pie diagram

**Functional specifications**:

* Data layers tiled and drawn on map
* Ability to zoom manually (user chooses) and dynamically (when user searches address, zooms to address and places marker)
* Popups or hover actions on each county providing relevant information
* Additional dataset is joined/added to map
* Search bar will allow users to search and pinpoint a specific address
* A scrollbar or UI selection list will allow users to toggle on and off data layers on the map
* If included, chart/diagram/graph, will update dynamically.
* Perhaps provide a summary layer allowing users to see multiple types or ratios at once