



Predicting Functional Status Of Water Wells In Tanzania

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The Problem

- ▶ People rely on the wells for clean water
- ▶ Need better understanding of when repairs are needed
- ▶ Classify wells as functional, non functional, or needs repair through data



The Data

- ▶ From Taarifa and Tanzanian Ministry of Water
- ▶ Nearly 60,000 entries
- ▶ Contains information like:
 - ◁ Location
 - ◁ Type of water well
 - ◁ Water source



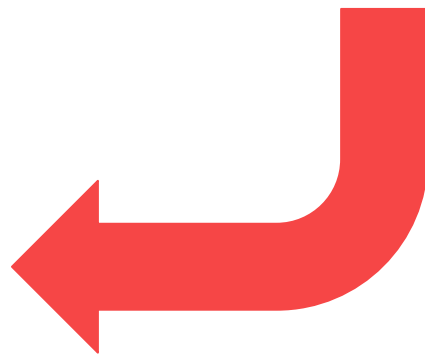
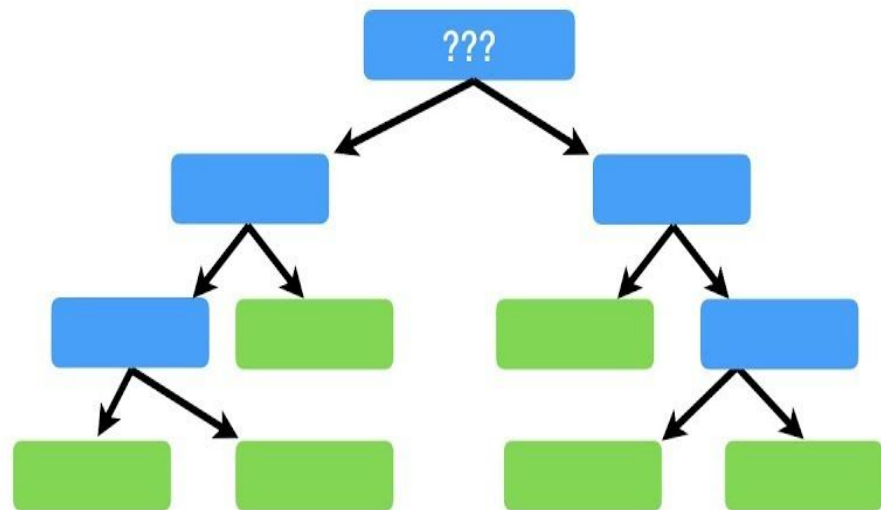
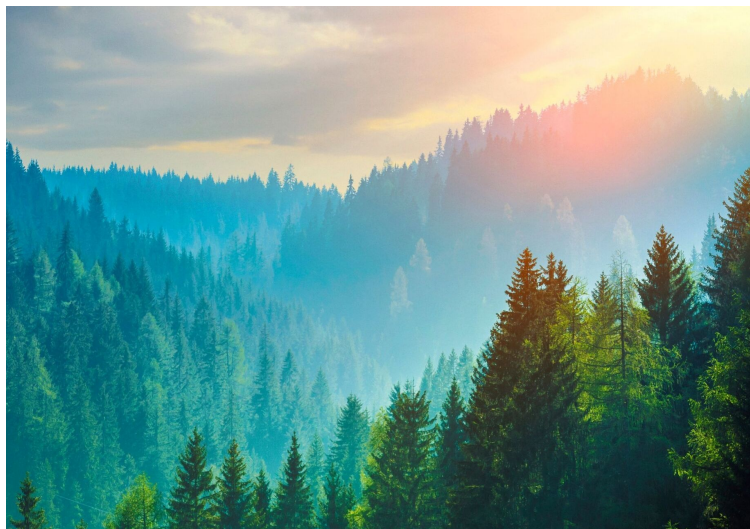
Methods

- ▶ Obtain
- ▶ Scrubbing
 - ◀ Null values
- ▶ Exploring
 - ◀ Get to know the data
- ▶ Modeling
 - ◀ Different types of models
- ▶ Interpretation



Model

- ▶ Random forest
- ▶ 78% accuracy

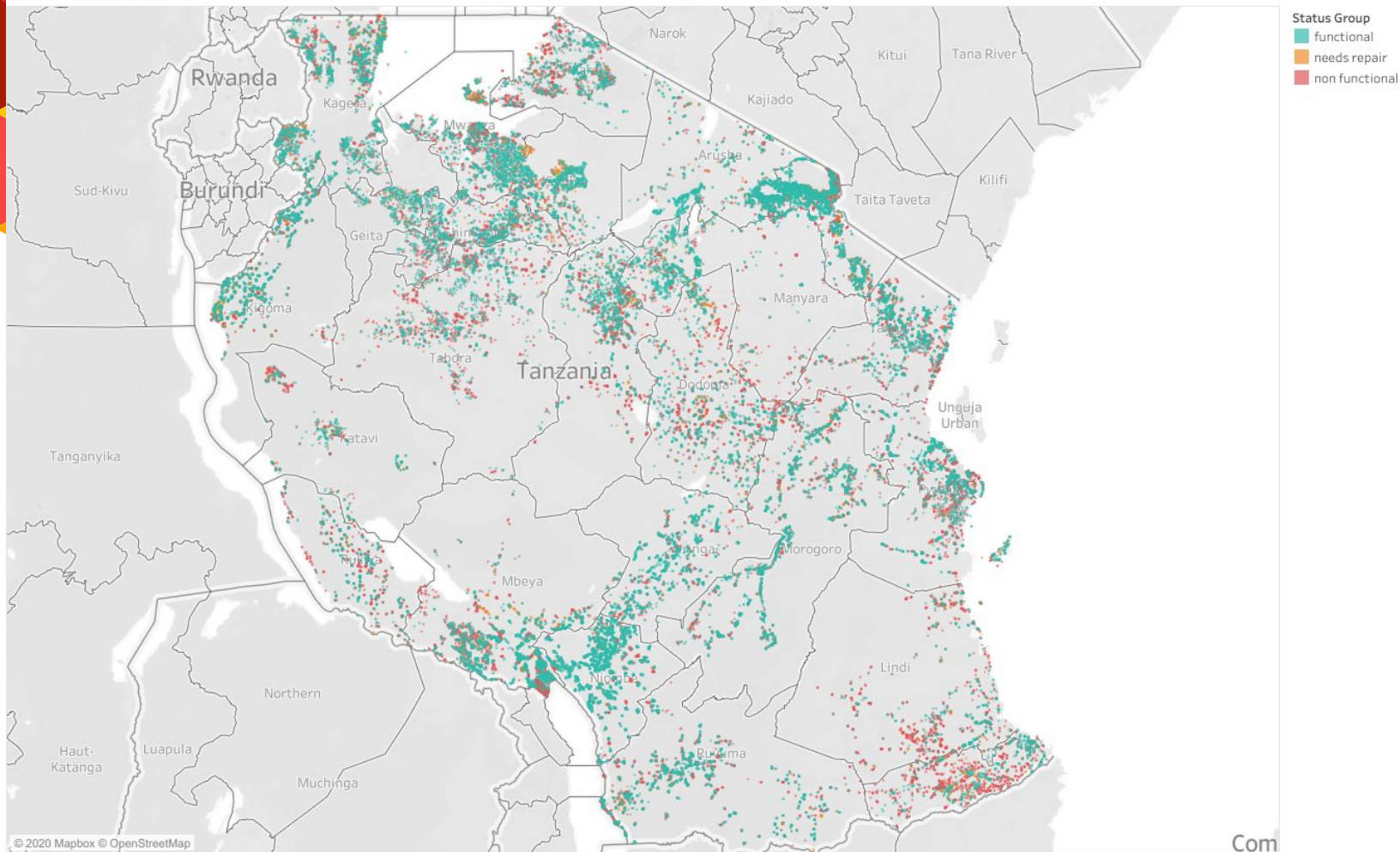




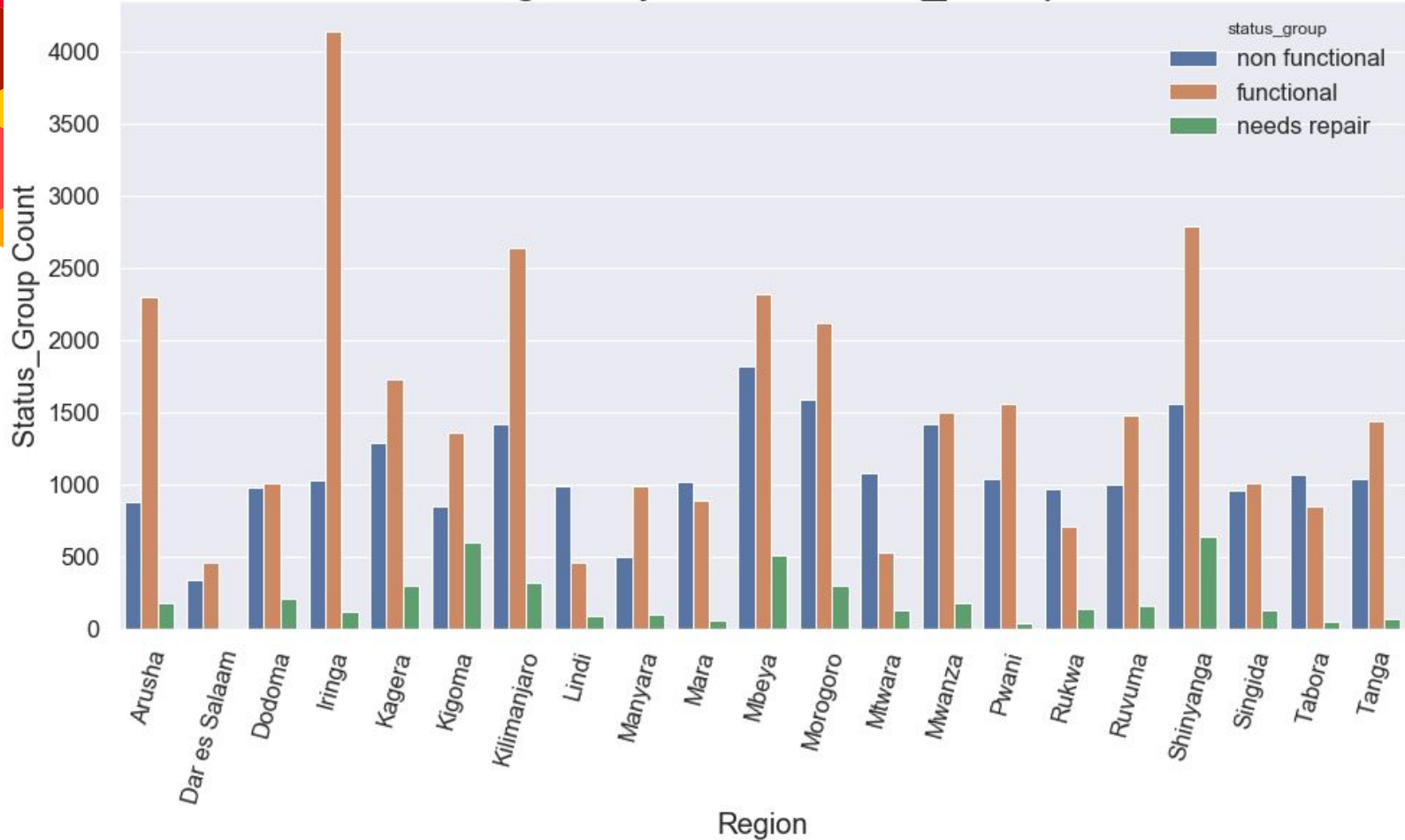
Findings

- ▶ Most important information includes location data
- ▶ Construction year
- ▶ City and water lab

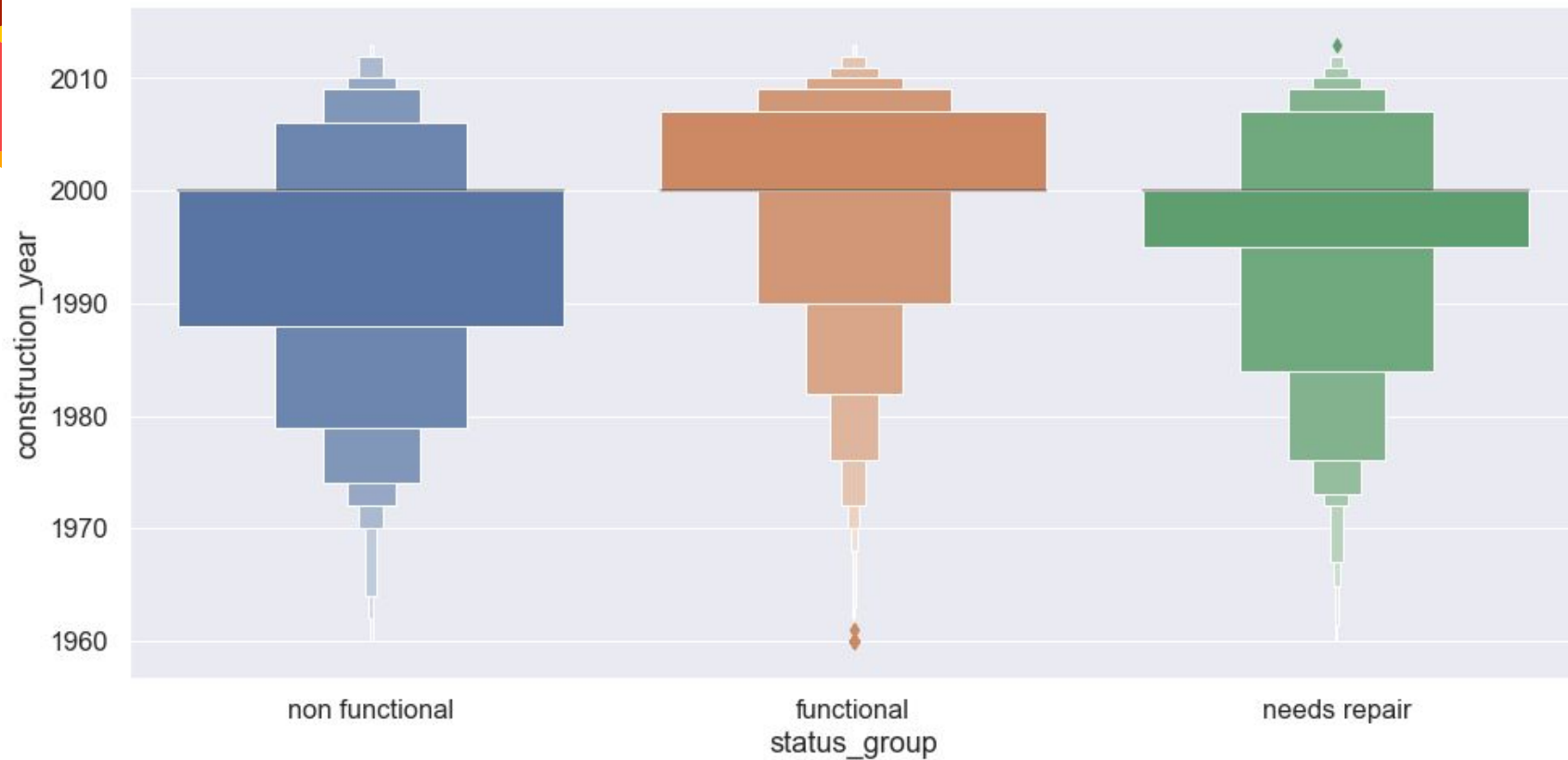
Water Well Status By Location



Region By Count Status_Group



Construction_Year and Status_Group





Recommendations

- ▶ Set up servicing schedule based on construction year
- ▶ Dry wells most likely to be non functional
- ▶ Tracking new information to capture needs repair category
 - ◀ Date well was last serviced
 - ◀ Repairs record



Future Work

- ▶ Add nearest city and servicing water lab to data collection
- ▶ Disparity in location should be addressed

Thank You For
Your Time

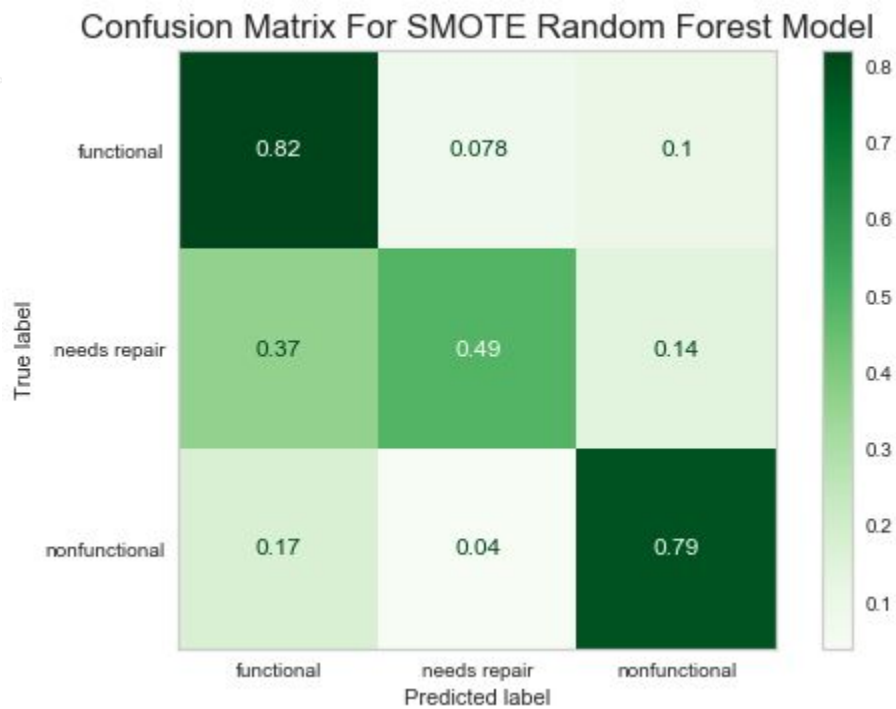
Any questions?



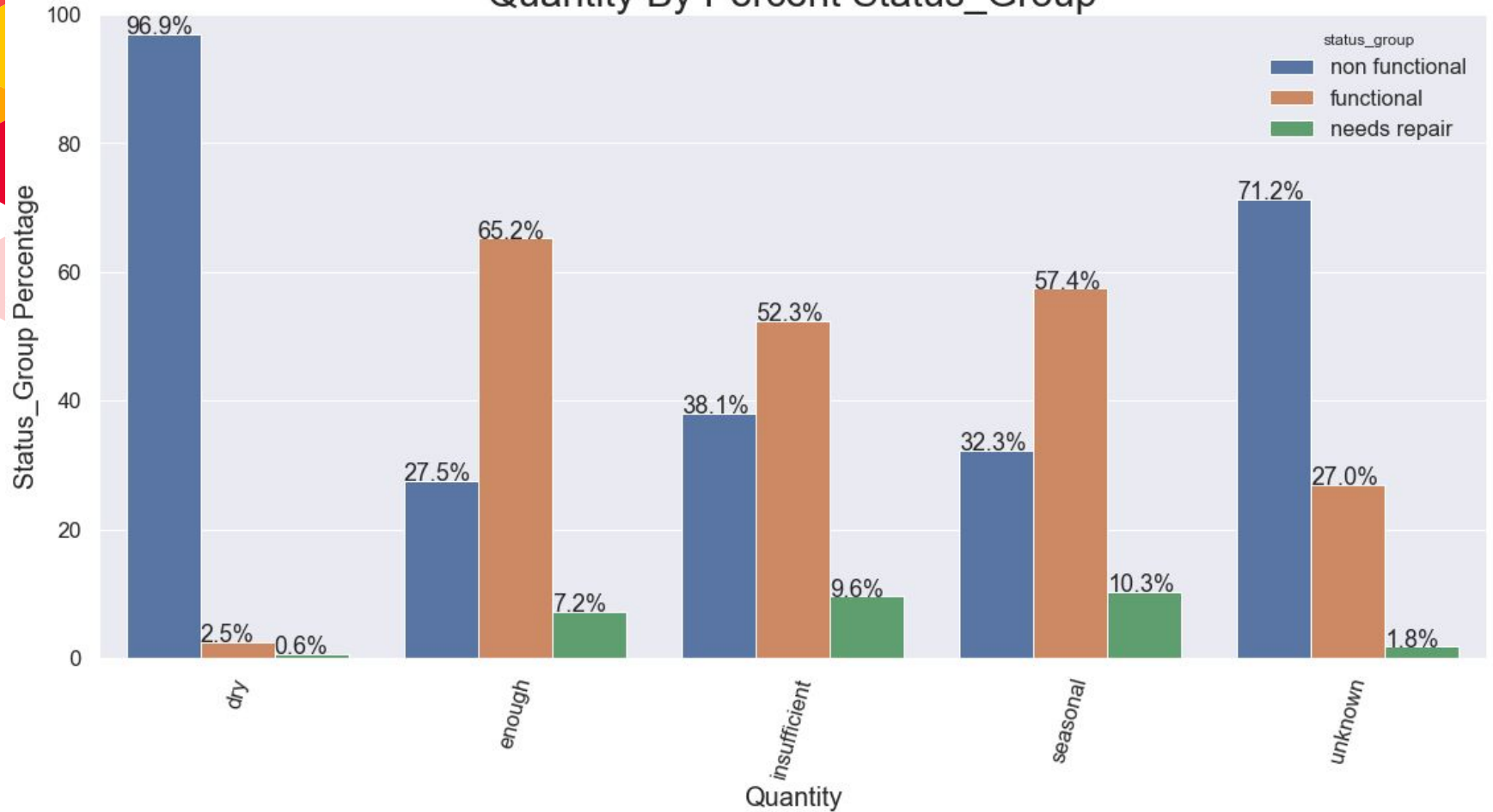


Appendix

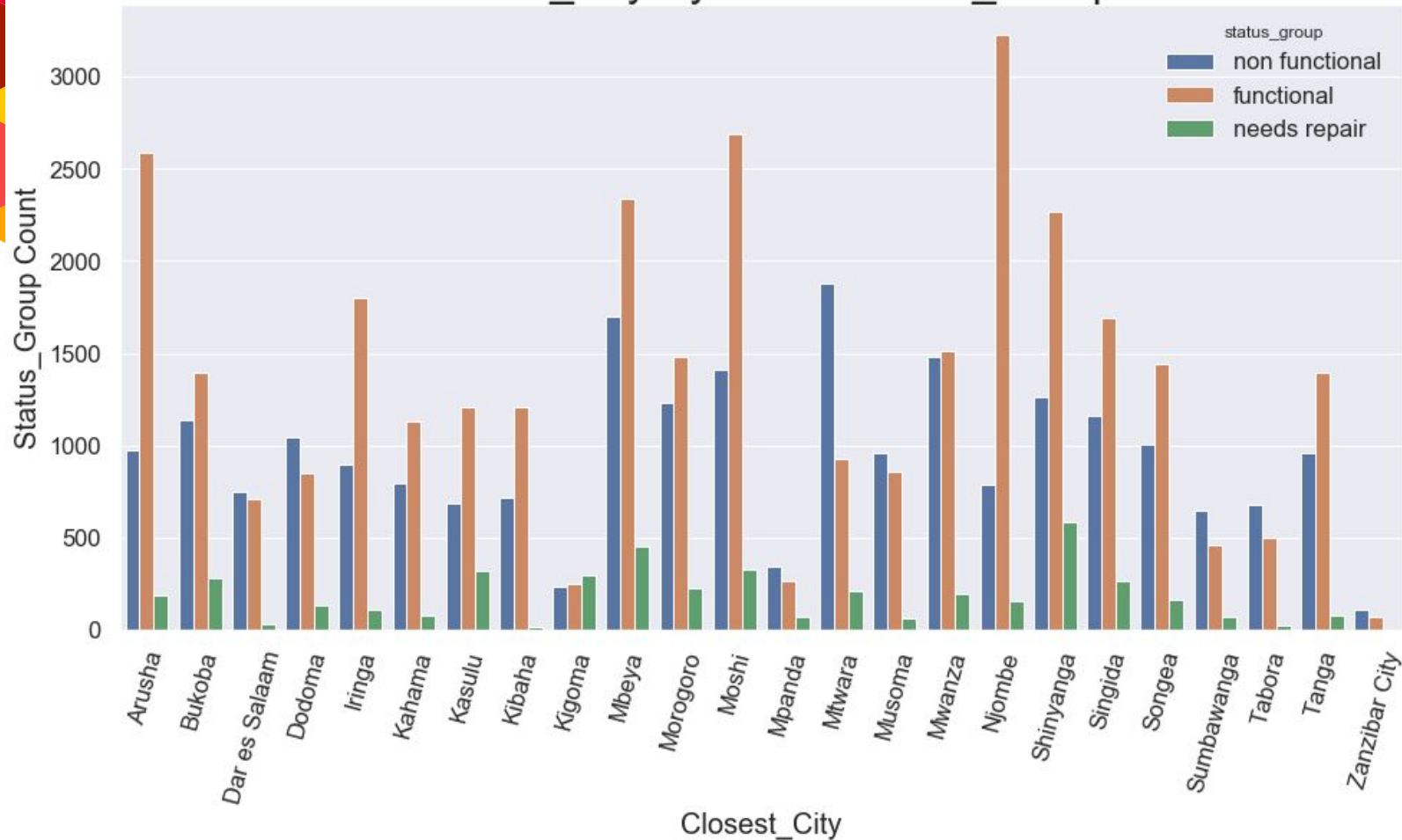
Extra visuals for those who want to know more



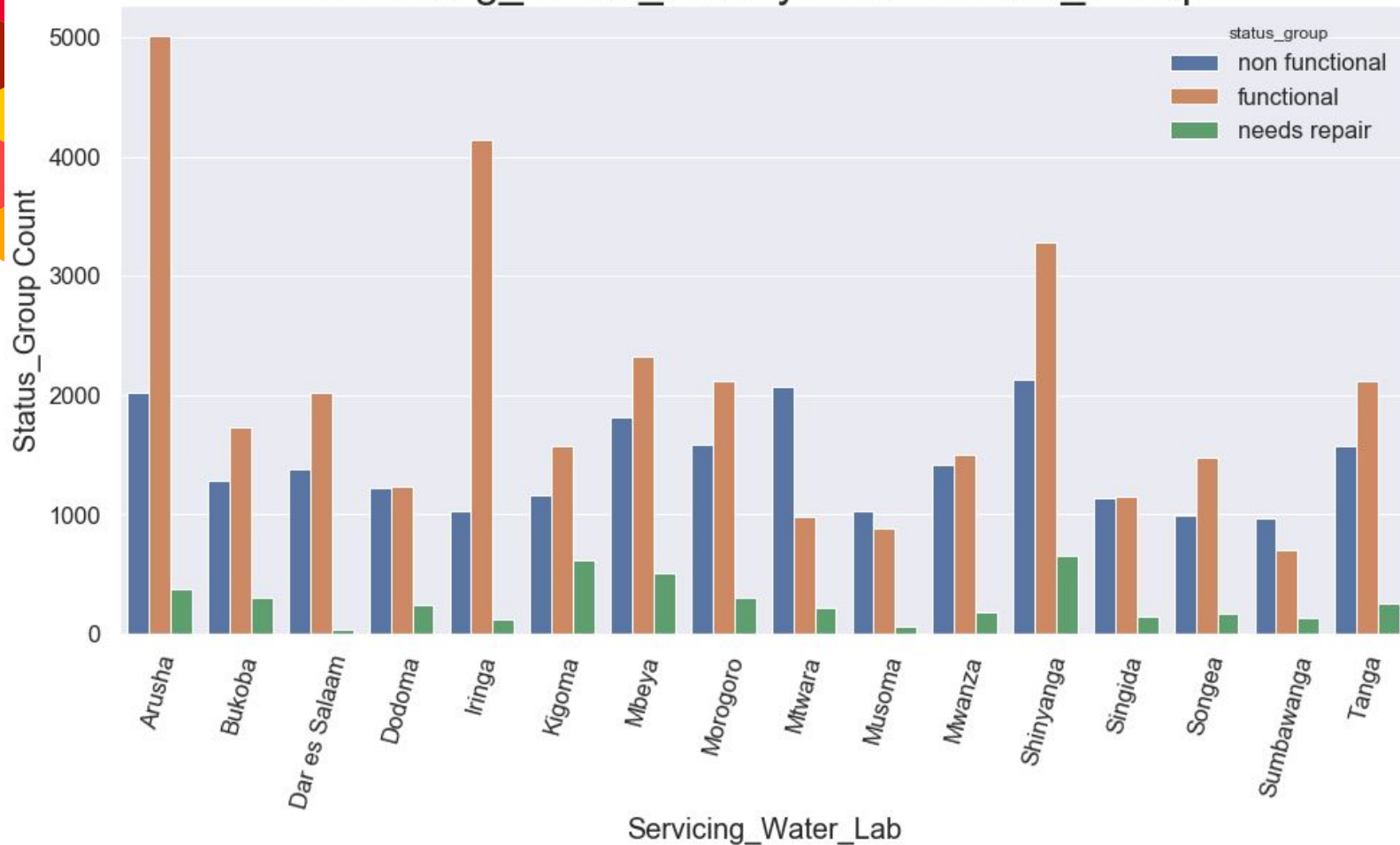
Quantity By Percent Status_Group



Closest_City By Count Status_Group



Servicing_Water_Lab By Count Status_Group



Waterpoint_Type By Percent Status_Group

