Tanzania’s Water

A deep look into the country’s water points

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Tanzania’s water problem

Project Objective

- Our main aim was to best predict issues with water pumps to promote greater access to clean water across Tanzania.

How?

Using data collected by Taarifa, an open source platform for the crowd sourced reporting and triaging of infrastructure related issues.

Problem Description

Out its total population of 57 million inhabitants:

24.6 million people don't have access to clean water.

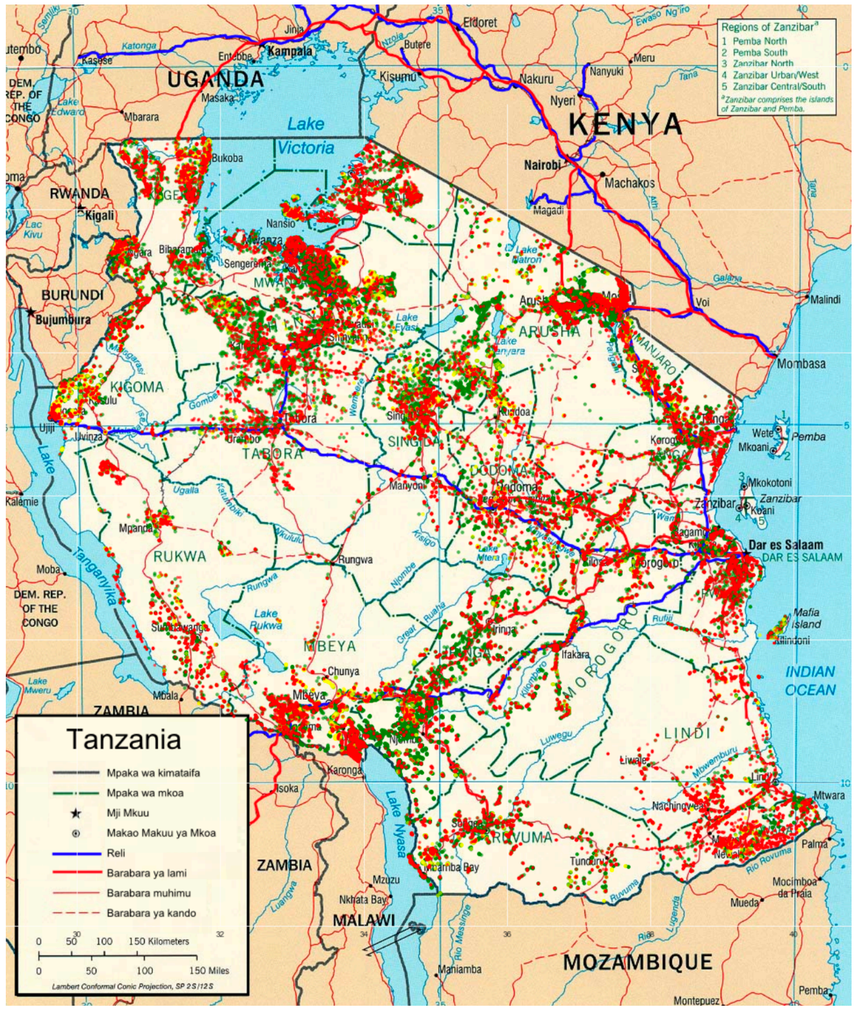
40 million people lack access to improved sanitation.

Access to clean fresh water and sanitation is a human right as recognised by the United Nations General Assembly.

Sources: https://www.wateraid.org/where-we-work/tanzania
https://www.un.org/waterforlifedecade/human_right_to_water.shtml

Taarifa’s readily available data

- The data used to analyse the condition of water points included features such as:
  - Geographic information
  - Nearby community information
  - Waterpoint and water source details
  - As well as many others finer details…



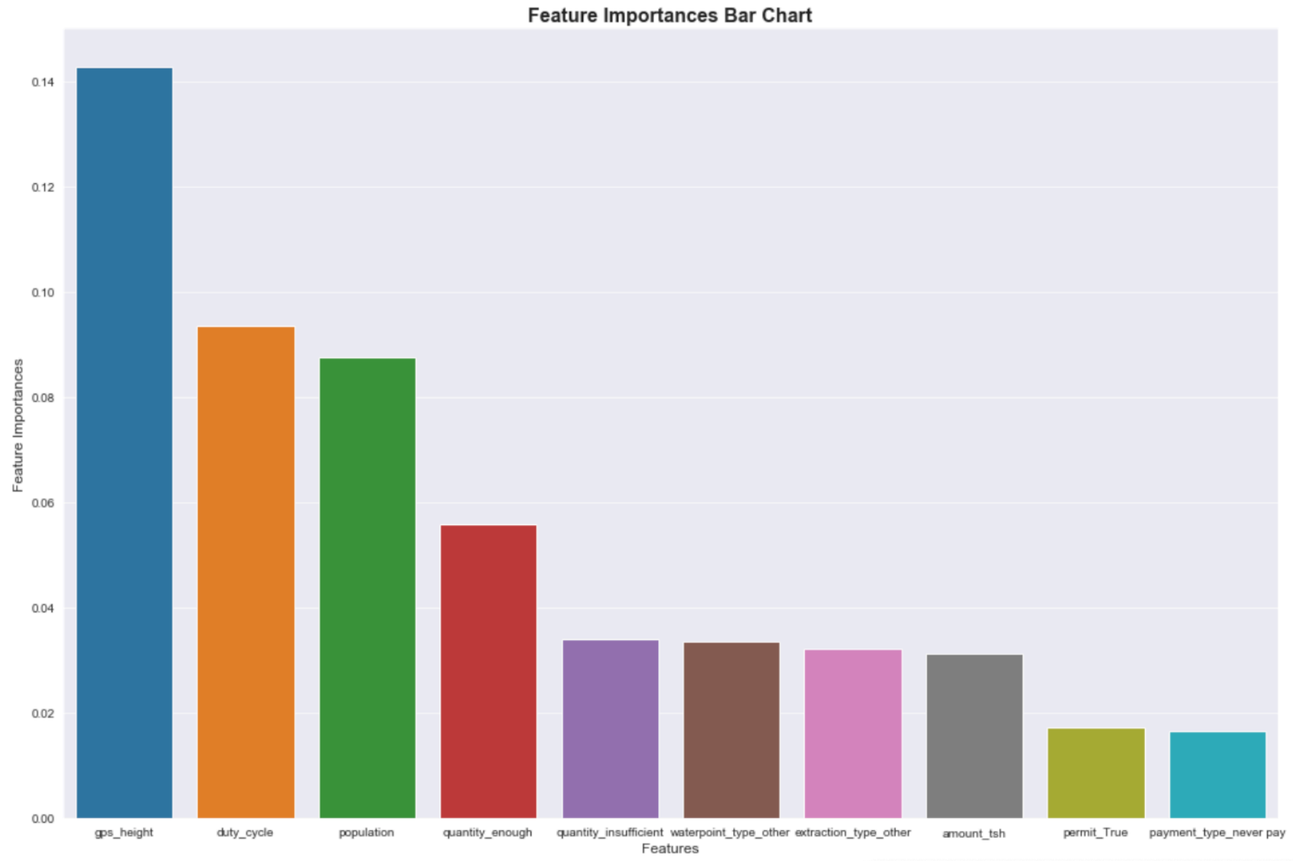
‘Taarifa’ is the Swahili translation of the word ‘Information’

Analysis Results

Important Features

- After performing our analysis on the available data, the key features associated with the performance of water pumps in Tanzania revealed the following feature dependancies.

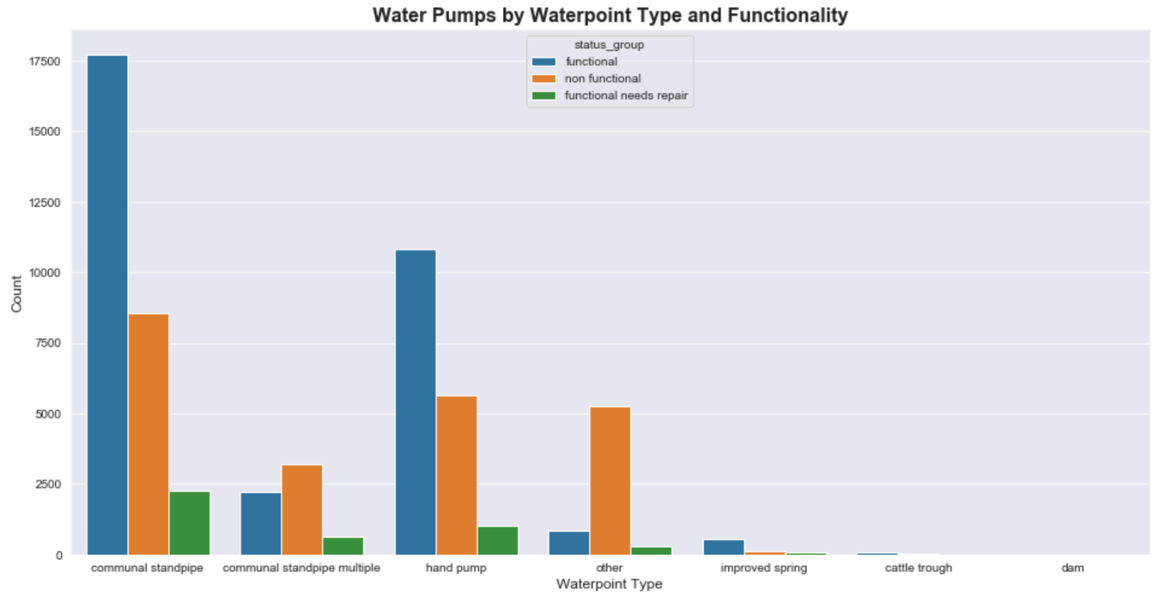
- The key features our model ran on include location (altitude), population, water quality and quantity, operational duration and others as can be seen.



Key Insights

1 - Waterpoint Type

- The most commonly implemented waterpoint type are communal standpipes and hand pumps.
- Communal standpipes are also the majority of functional waterpoints at this time.
- Dams and cattle troughs are the least common water point types indicating poor infrastructure.
- While other types of waterpoints seem to be experimental or lacking in performance compared to other more common types.

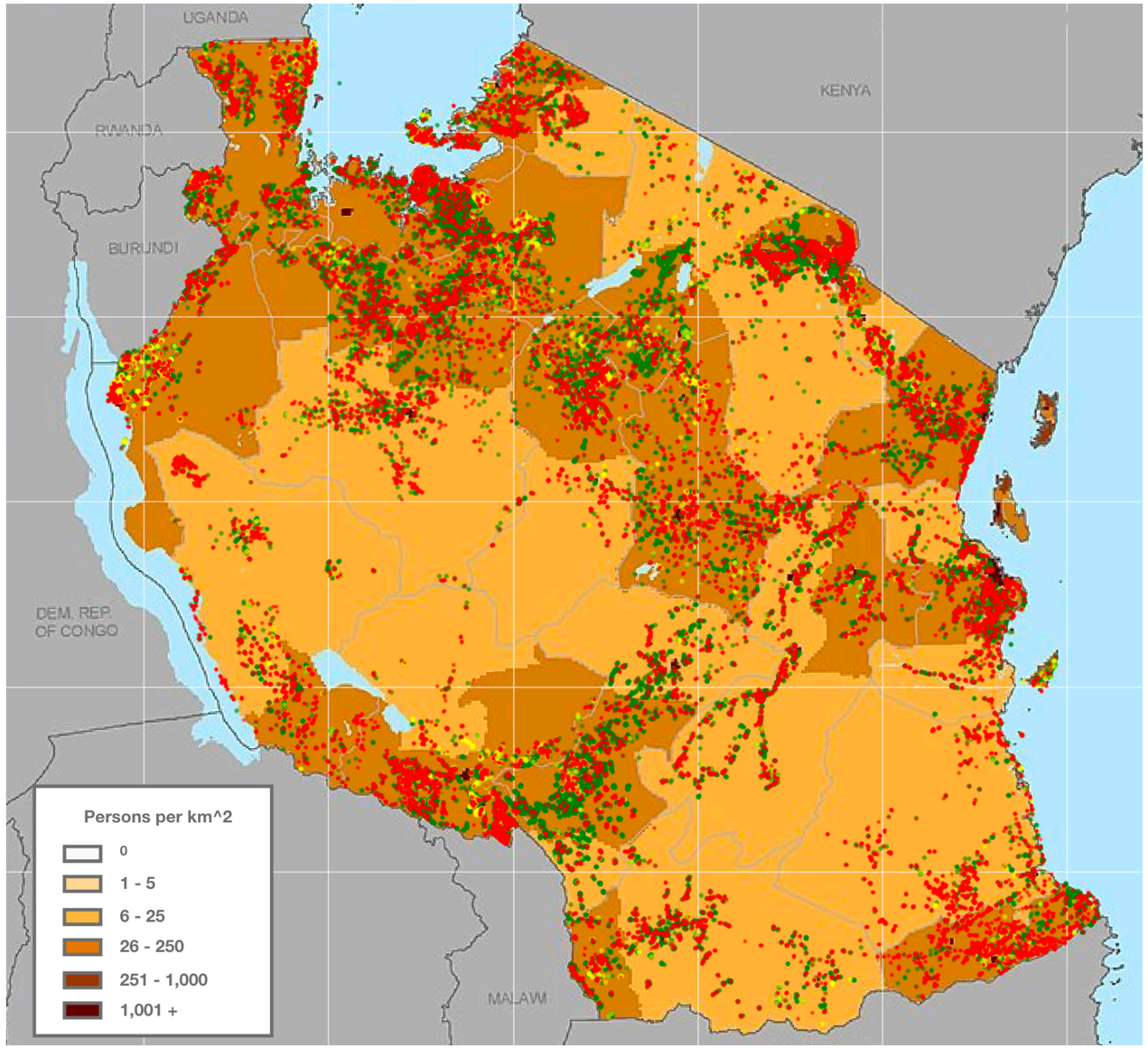


Communal standpipe

Key Insights

2 - Population

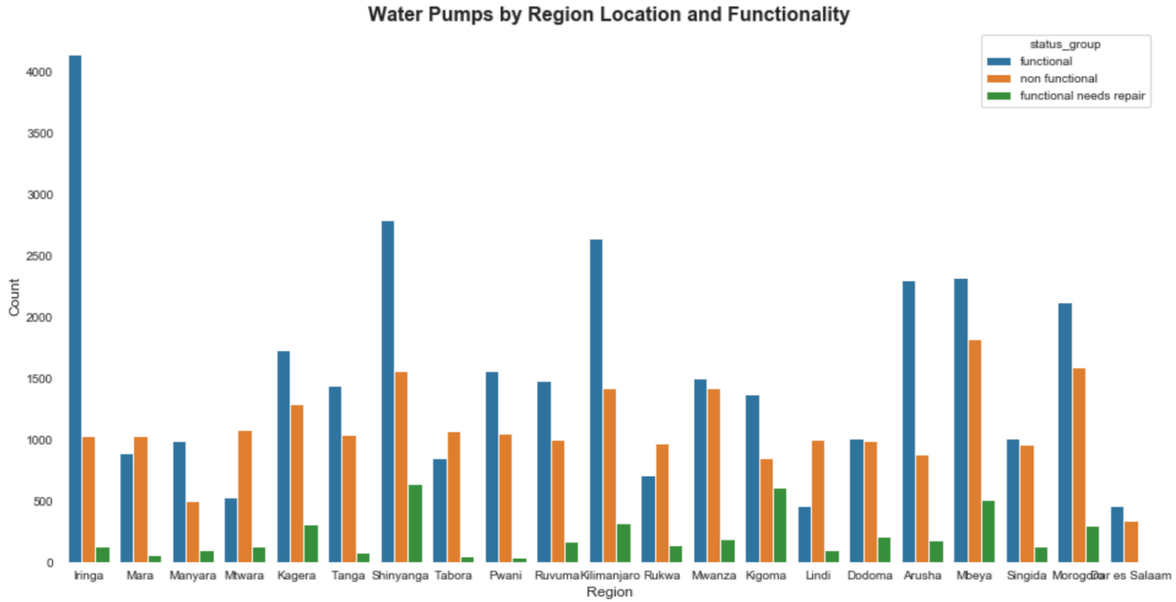
- With a total of 57 million inhabitants and lacking infrastructure we can see that the previously implemented projects have focused on densely populated regions.
- Population dense regions are in need of fresh clean water to help promote sanitation and healthy living.
- Again, 24.6 million inhabitants lack access to clean water, that is almost half of the country’s population!

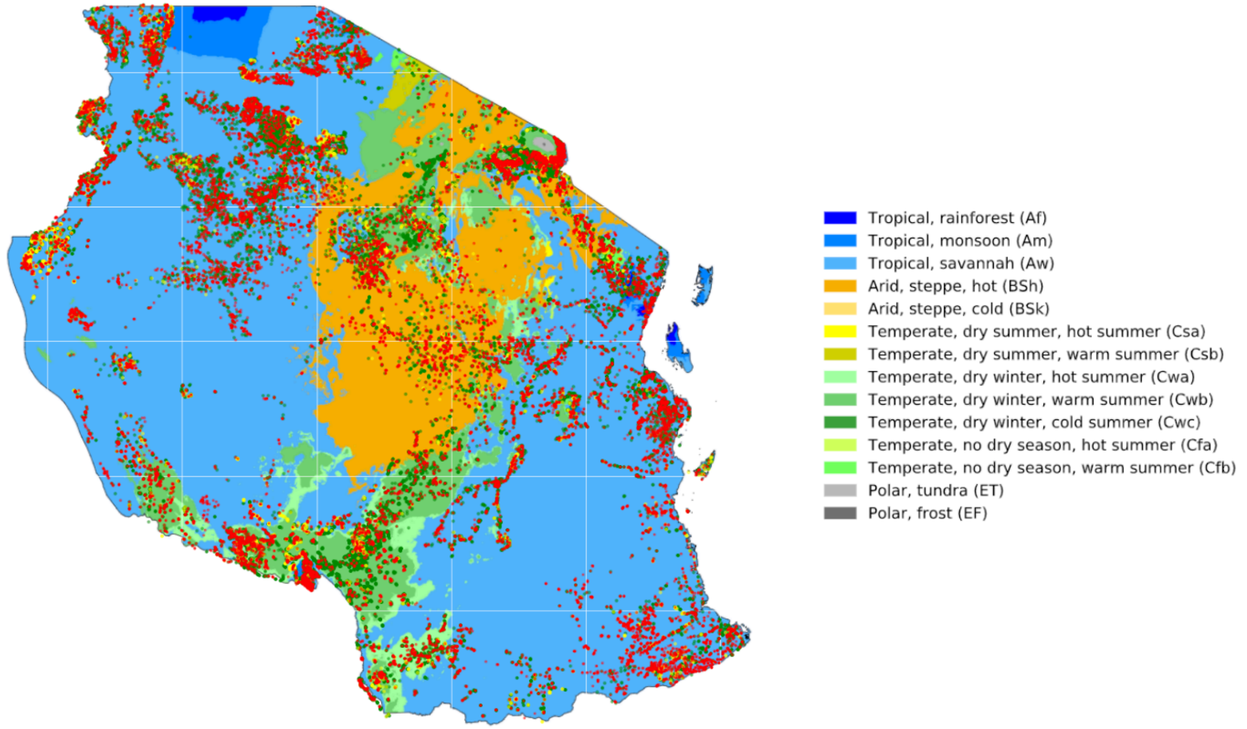


Key Insights

3 - Location

- While most regions have a higher ratio of functioning waterpoints to non functioning ones, we can also notice some regions require repairs be made as to not offset this ratio.
- The different landscapes in Tanzania range from icy mountain tops to the north to tropical rainforests and dry landscapes to the south
- A concentration of non-functional waterpoints can easily be visualised on the map near or around mountainous tops, costal cities, and tropical locations

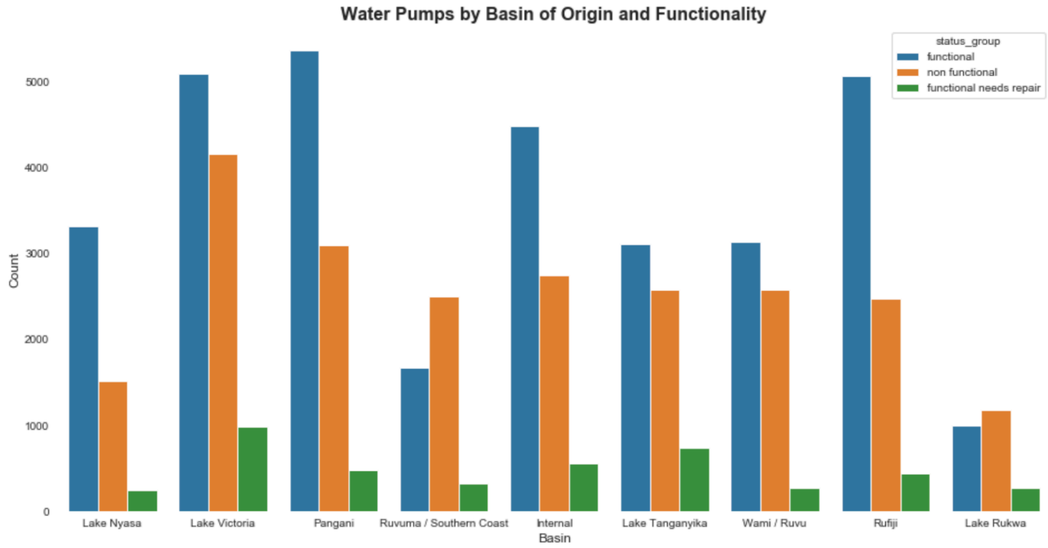


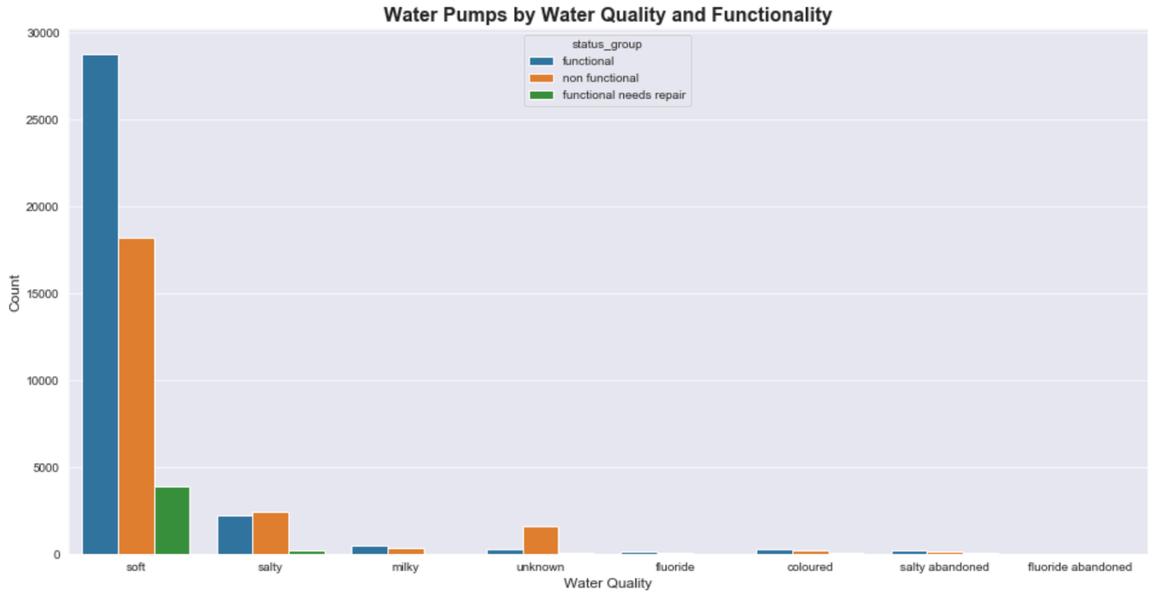


Key Insights

4 - Water Quality

- The majority of the waterpoints in Tanzania at this moment have a fresh supply of ‘soft’ water
    - Soft water is water in which the only solute in Sodium.
- Salty water, while also containing sodium also contains Chloride.
- While not considered harmful to humans increased consumption of salty water may lead to kidney diseases, while at the same time corroding metals that lead to equipment deterioration.

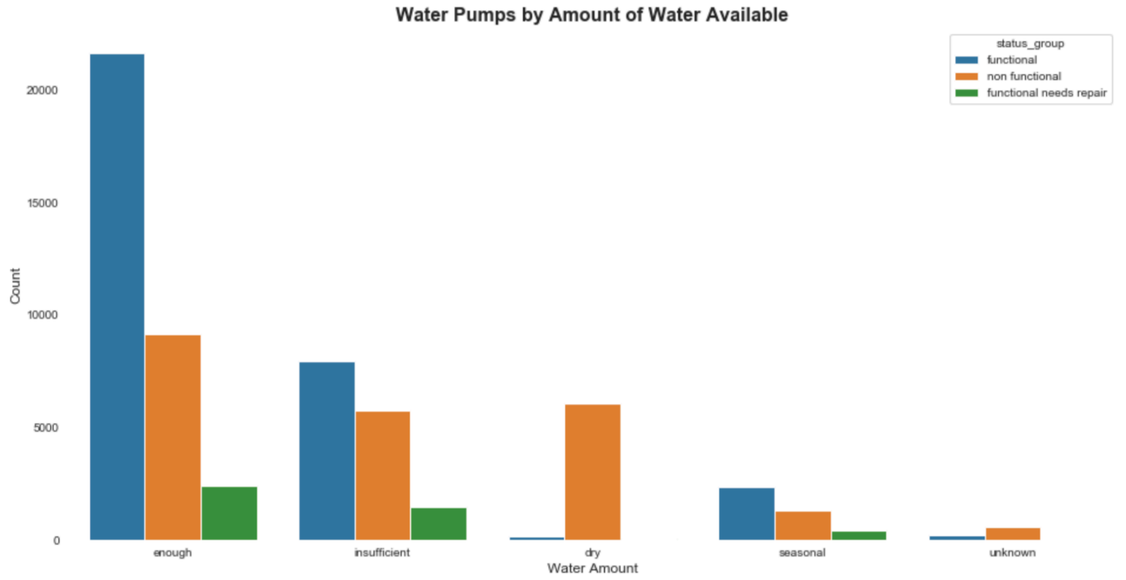


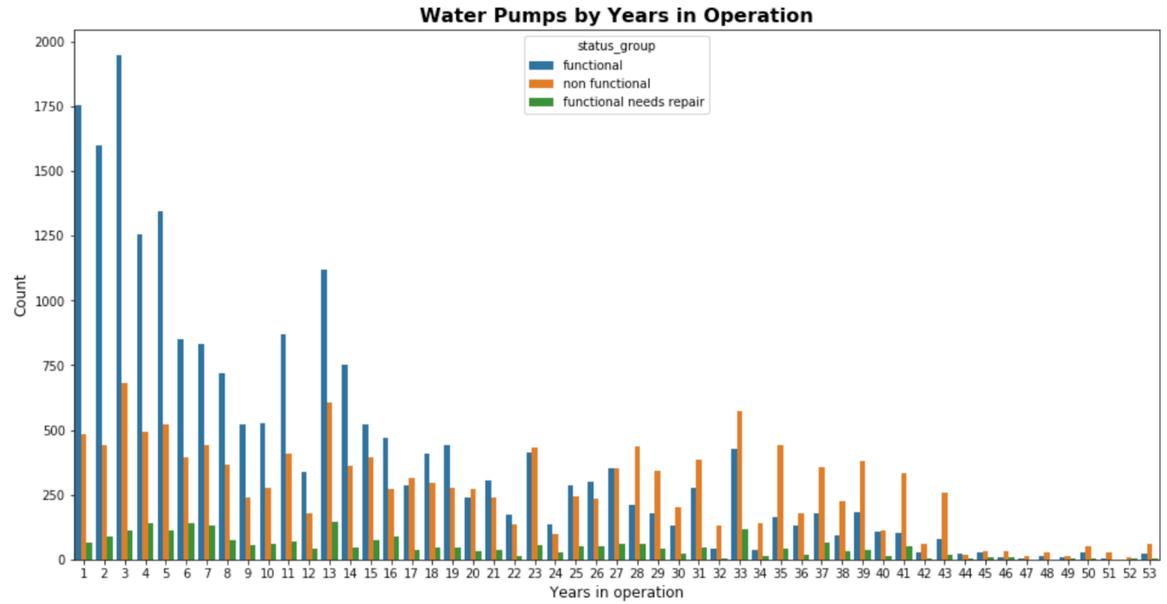


Key Insights

5 - Operational Life

- Not all water pumps are created equally.
- The conditions the installed pumps witness vary based on location and usage.
- Areas with low amounts of available water eventually tend to malfunction or require repairs.
- Low maintenance of these equipment especially electric machinery tend to reduce their operational life expectancy.





Thank you for listening!

Any questions?