

The background is a light gray gradient. It is decorated with numerous realistic water droplets of various sizes, some with highlights and shadows, scattered across the surface. In the upper center, there is a faint, circular logo or watermark that appears to be a stylized globe or a similar emblem.

# TANZANIA WATER POINTS STATUS MODELLING

04/08/2022



# OUTLINE

- BUSINESS PROBLEM
  - DATA AND METHODS
  - RESULTS
  - CONCLUSIONS
  - RECOMMENDATIONS
- 


# BUSINESS PROBLEM

Four million of people in Tanzania lack access to an improved water source, while 29 million lack access to improved sanitation.

An NGO focused on improving Tanzania's water situation would like to be able to predict functional waterpoints, those that are functional and need repair and those that are completely non-functional. This would go a long way in trying to maintain the already existing water infrastructure to allow for better water access across the country improving people's quality of life.



# DATA AND METHODS

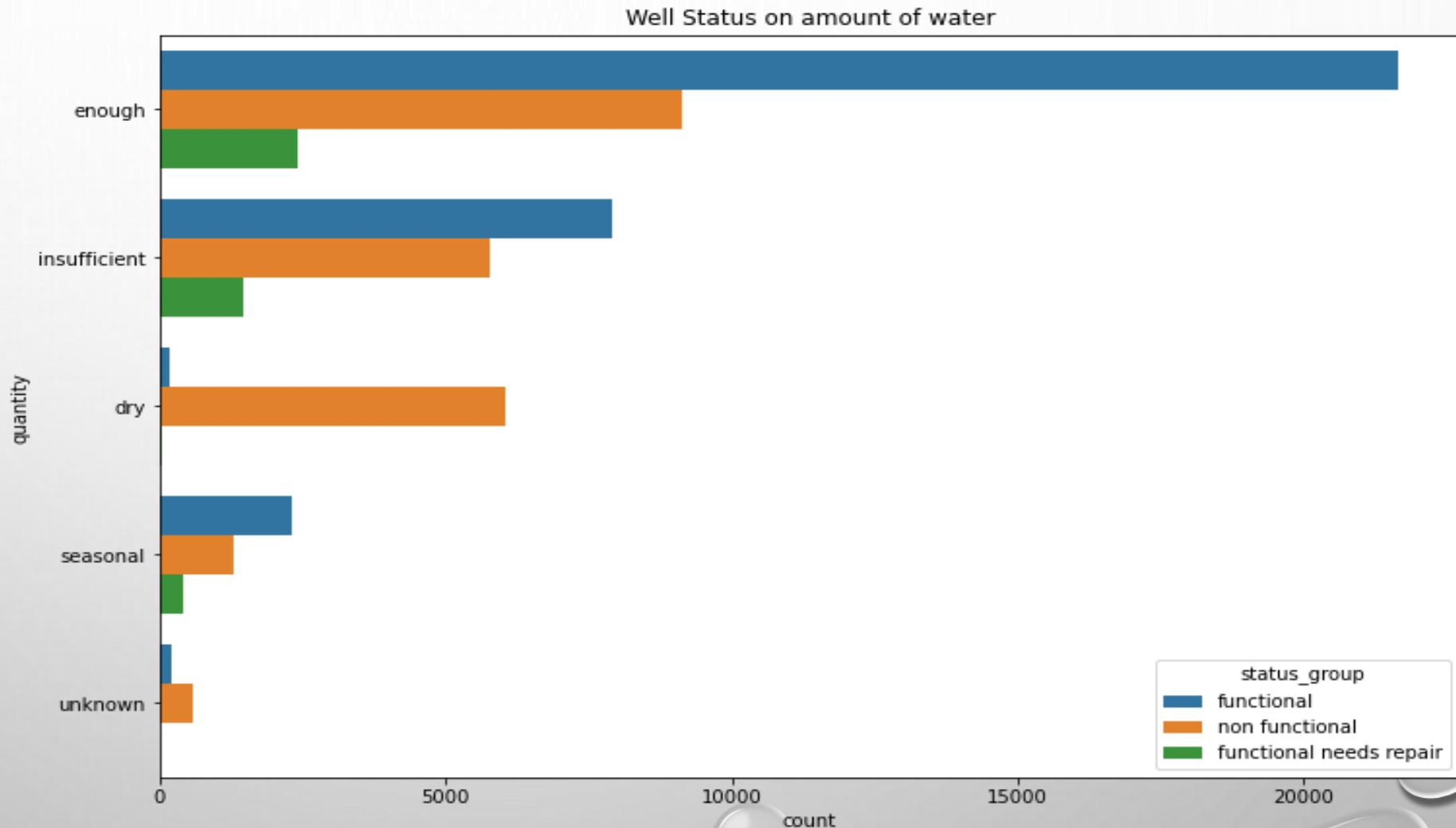
- The data used in this analysis is downloaded from drivendata.
  - This project uses exploratory data analysis and machine learning techniques.
- 

# BEST MODEL

- RANDOM FOREST
- ACCURACY: 0.75

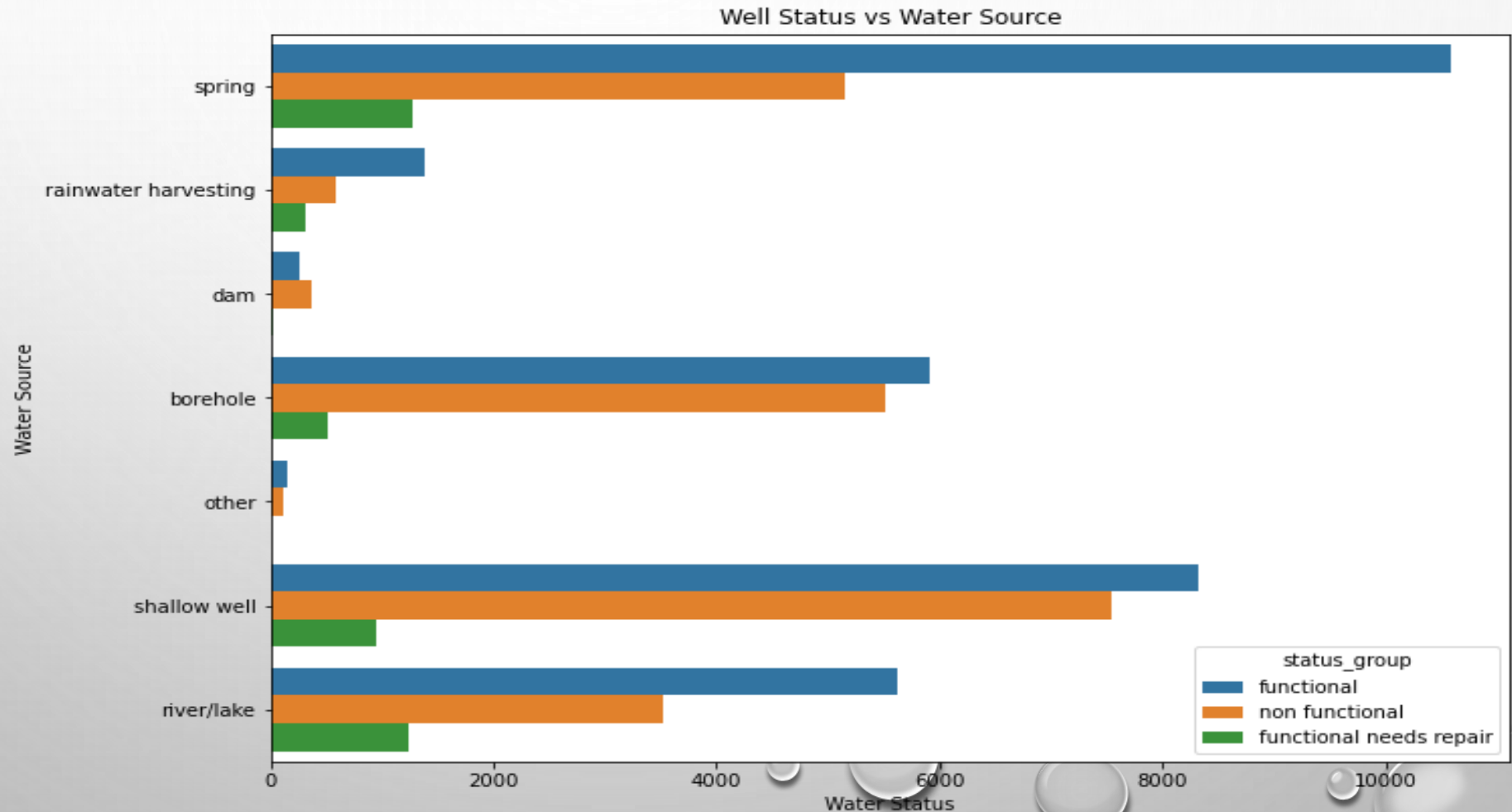
# WATER QUANTITY

The ratio of functional to non-functional waterpoints is higher where the quantity of water is insufficient. Where it is dry, the non-functional waterpoints are high. A decrease in the quantity of water is likely to lead to an increase in the number of non-functional waterpoints.



# WELL STATUS VS WATER SOURCE

Comparing the functional to the non-functional wells ratio, boreholes and shallow wells have the highest number of non-functional wells in comparison to the functional ones.



# CONCLUSIONS

- The classifier is suitable for predicting the status of the waterpoints.
- The quantity of water is crucial in determining the status of a waterpoint
- The location is important in determining the status of a waterpoint
- Shallow wells and boreholes have the highest number of non-functional wells in comparison to the functional ones.





# RECOMMENDATIONS

- Waterpoints with low water quantities should be frequently looked at as they have a very high chance of failing.
  - Locations that have a very high number of non-functional waterpoints should be prioritized during repairs.
  - Shallow wells and boreholes should be closely monitored as they tend to have a very high number of non-functional wells.
- 