

TANZANIA WATER ACCESS



Presentation Overview

1

Business Problem
Data Understanding

2

Modeling and
Analysis

3

Recommendations
and Further Steps



Project Overview

 40%

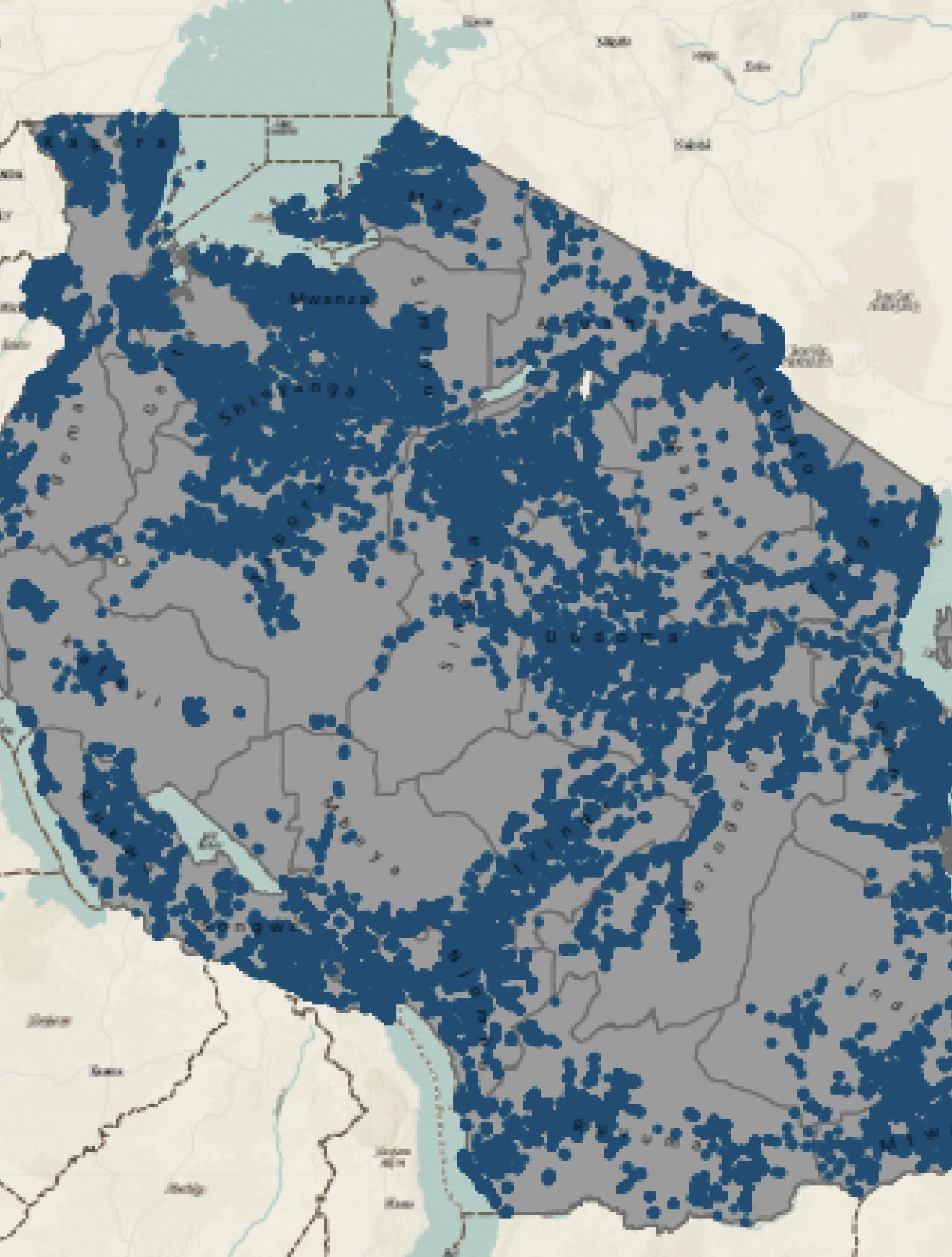
Water pumps in Tanzania
are Not Functional

 7%

Of those that are
functional, need repair

 4M

Lack access to safe
water





Non-Functional Pumps

Non-functional pump density by region

Business Problem

- World Health Organization
- Create a model that can predict which pumps are functional, need repairs, and non-functional.
- False "Functional" predictions have high health risk
- **Ensure safe drinking water!**



Data Understanding

[Taarifa: an open source platform for infrastructure related issues.](#)

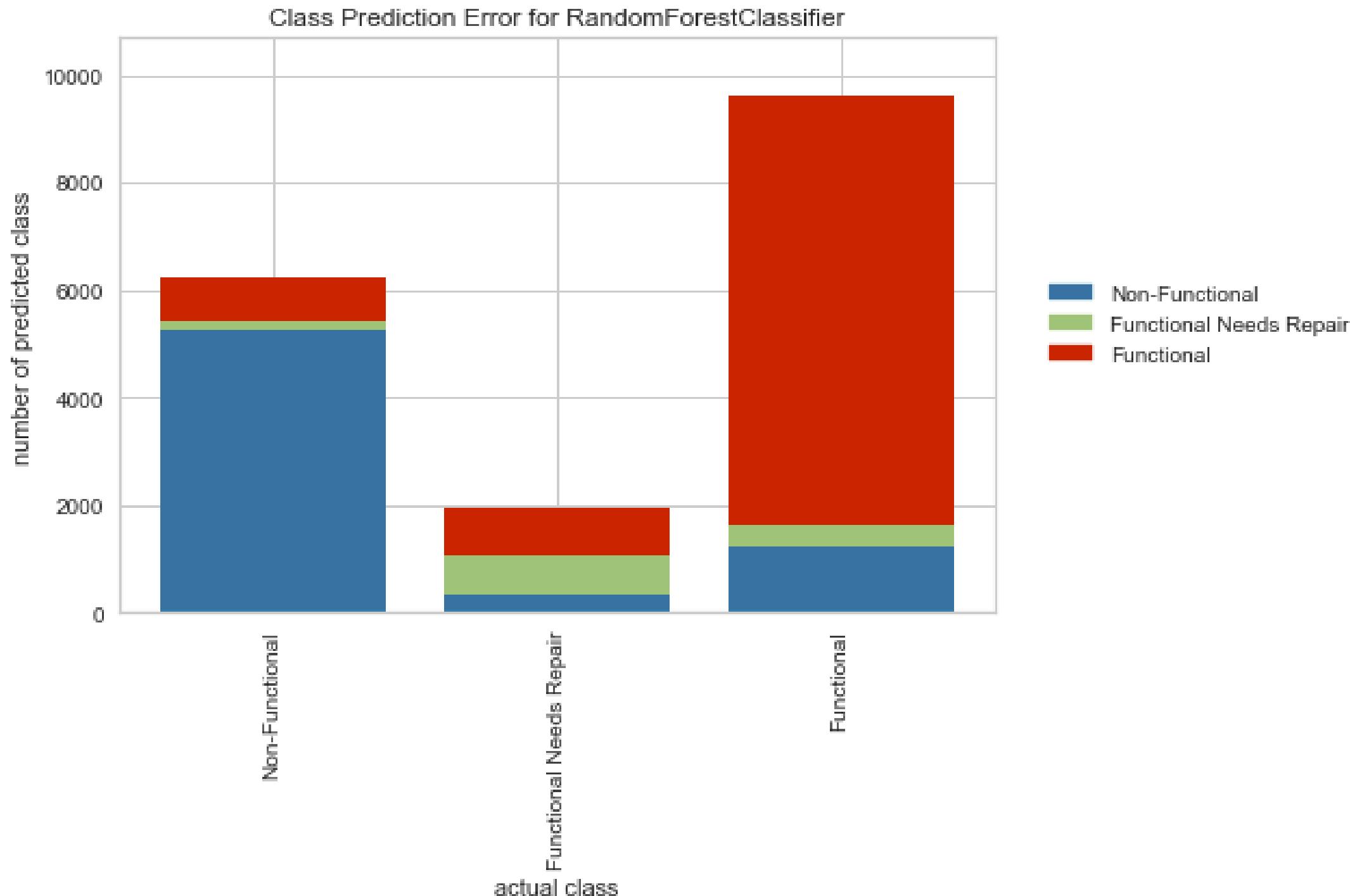
Water Pump Features

- Water quality and source
- Pump location and type
- Age

Water Pump Labels

- Functional
- Functional Needs Repair
- Not Functional

Modeling



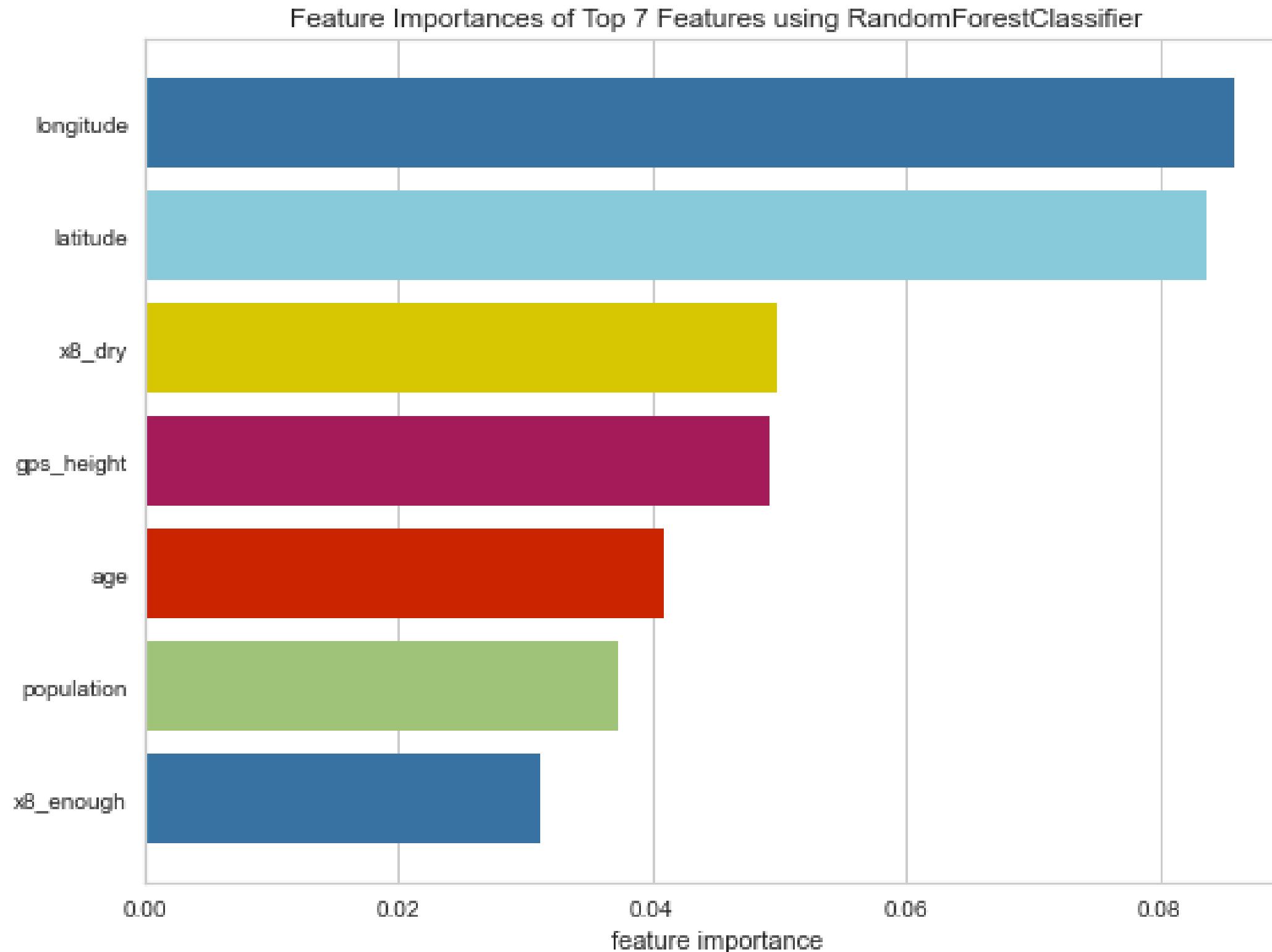
- Performed well for predicting Functional and Non Functional pumps
- Mediocre prediction of Functional Need Repairs pumps

Modeling



- False predictions of Functional Needs Repair - majority categorized as Functional
- Model performed best at minimizing False Positives

Modeling

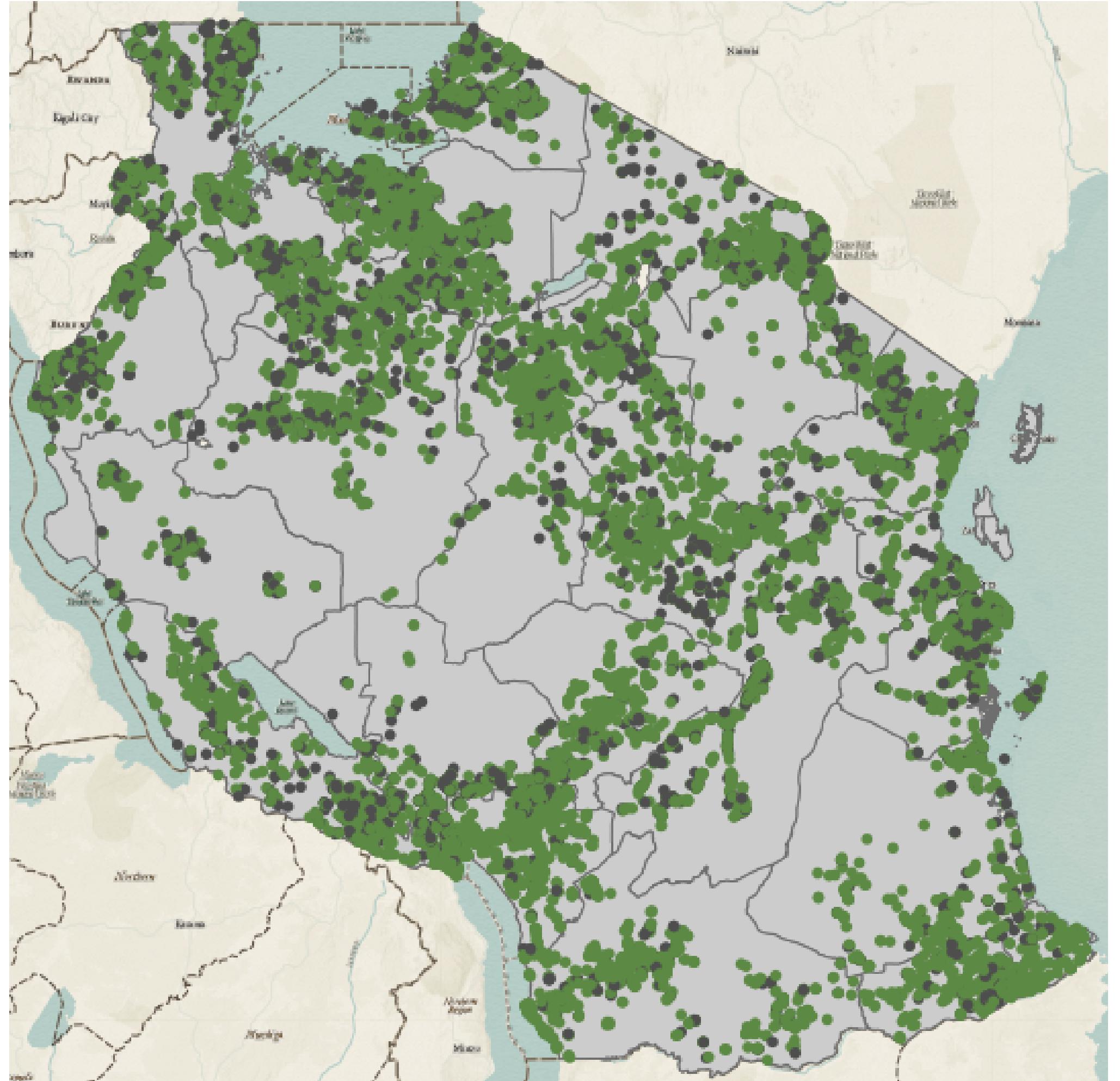


- Location has a huge effect on our models prediction
- x8 corresponds to Water Quantity - 'dry' and 'enough'

Final Evaluation

78%

Accuracy Predicting
Pump Status



Recommendations

- Reliable Non-Functional Predictions
- Functional Needs Repair is unreliable, beneficial to replace anyways due to health risks





Further Steps

- Add cost of replacement to analysis
- Faster modeling capabilities:
More features could provide better model

Thank you for your time!

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