

Predicting Well Functionality in Tanzania for UNICEF

World Wide Water



Meet the Team



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Agenda

- I. Main Findings
- II. Organizational Objective
- III. Data Analysis
- IV. Recommendations
- V. Future Steps



Main Findings

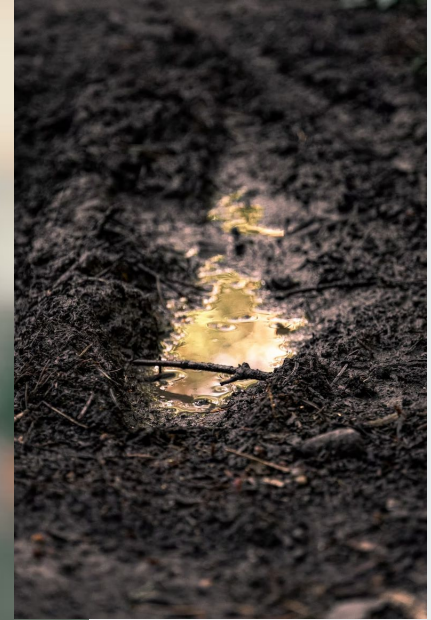
I. Age of Well

II. Extraction Type

III. Location



Organizational Objective



Data Analysis

- I. Data Overview
- II. Well Status and Age
- III. Well Status and Location
- IV. Well Status and Extraction
- V. Best Model



Data Overview

Data

Well Years

Unique
Wells

Limits



1960
|
2013

~54k

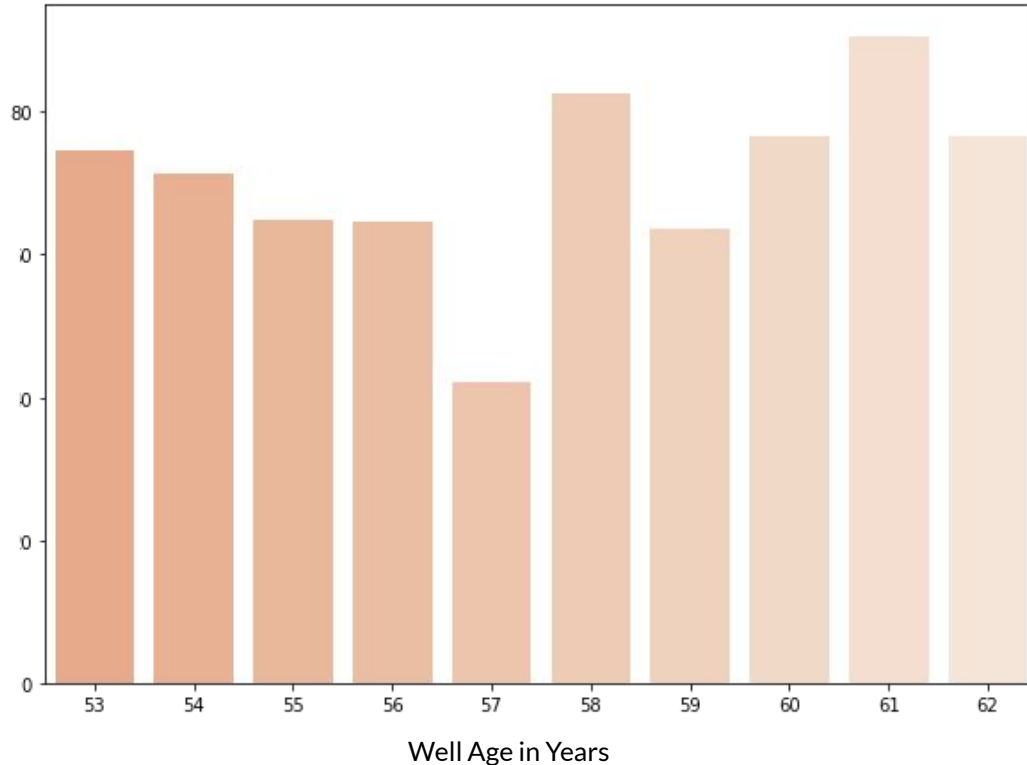


Data Analysis: Older Wells Perform Worse

10 Worst Performing Well Ages by Percentage



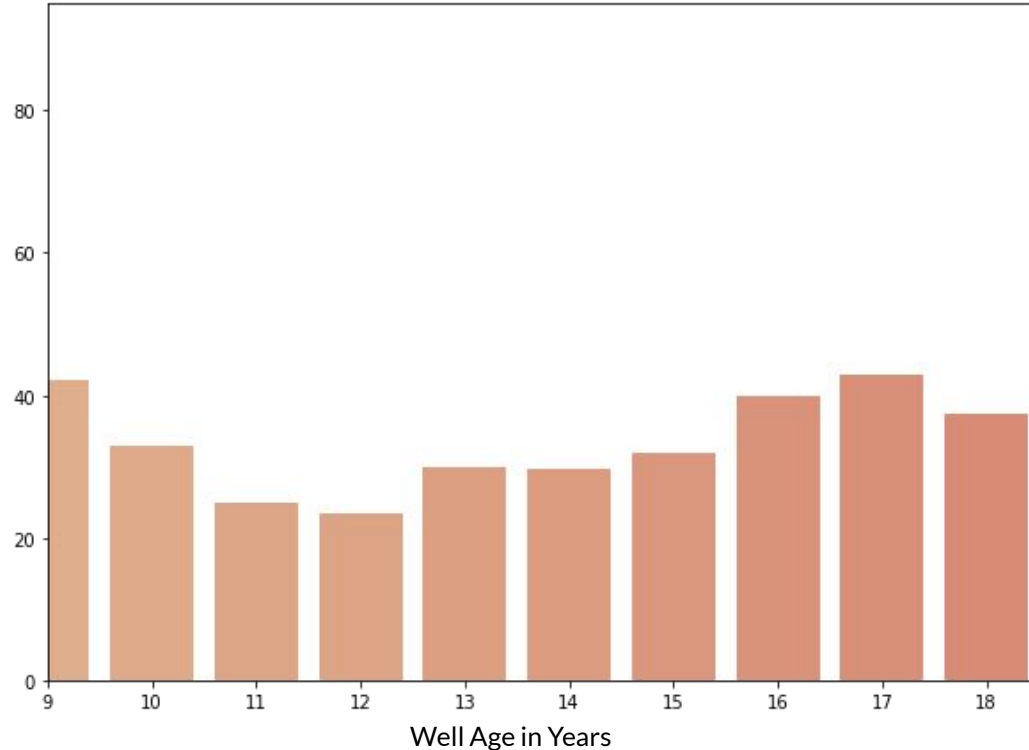
Percentage of Non-Functional Wells



Data Analysis: Younger Wells Perform Better

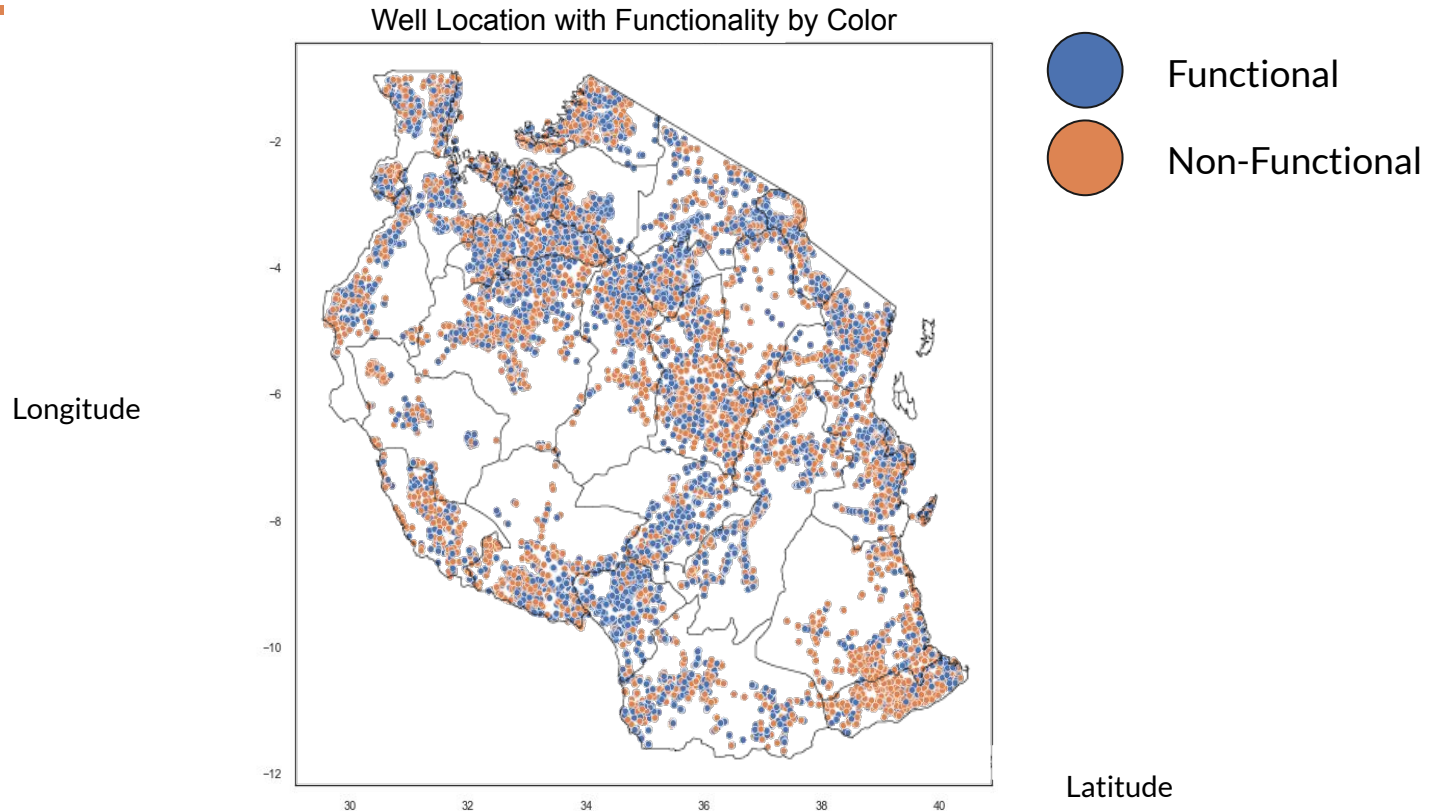


10 Best Performing Well Ages by Percentage



Percentage of Non-Functional Wells

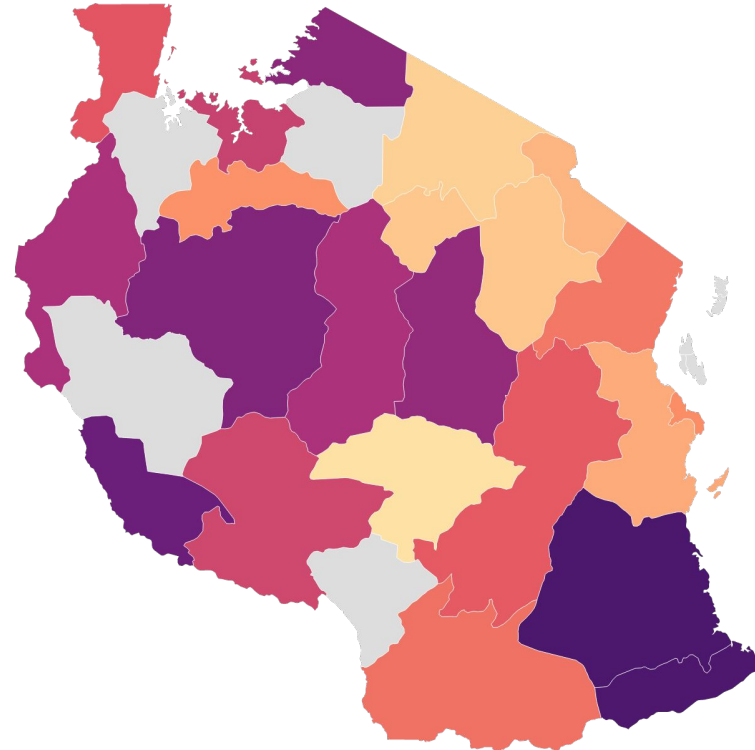
Data Analysis: Location Matters for Well Status



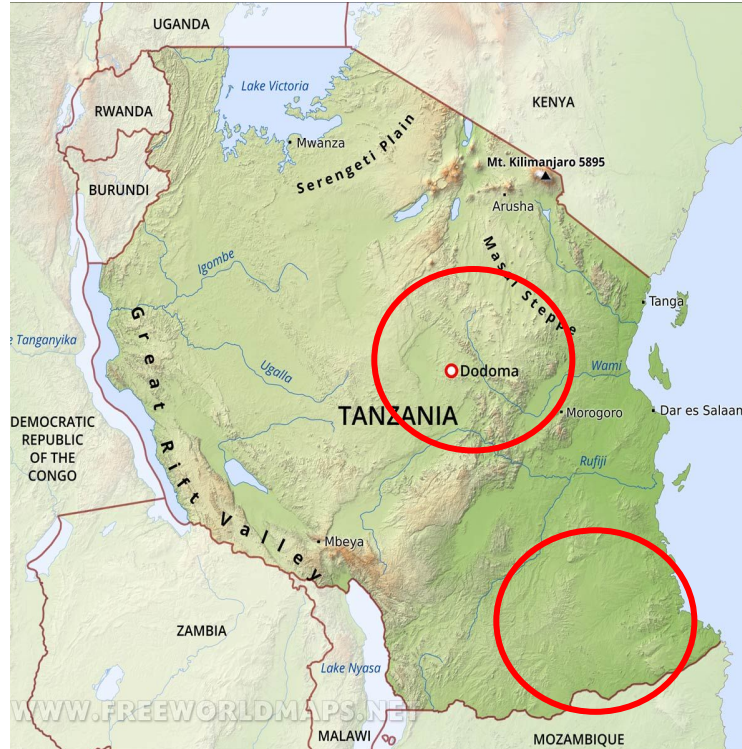
Data Analysis: Location Matters for Well Status



Percentage of Non-Functioning Wells by Region

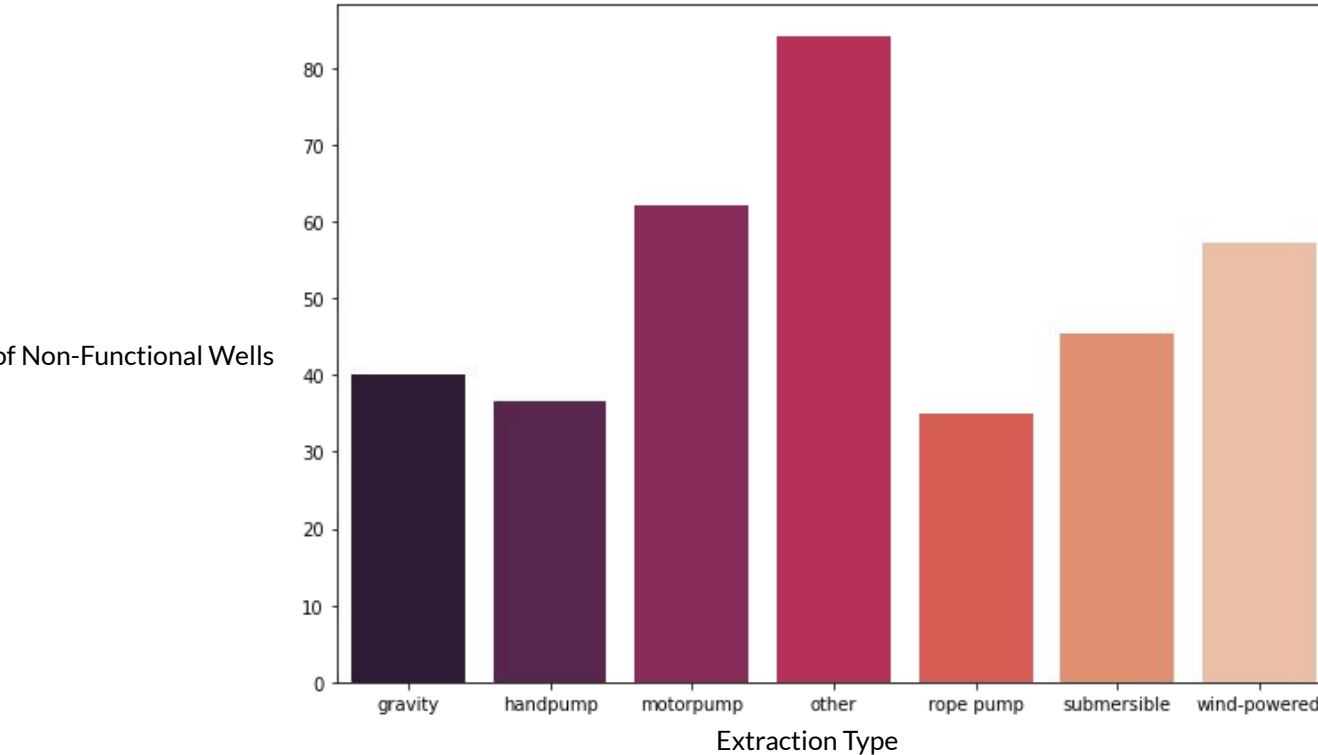


Data Analysis: Location Matters for Well Status



Data Analysis: Other & Motor-pump Wells Perform the Worst

Worst Performing Extraction Types by Percentage



Model Analysis

I. Model Scoring

II. Model Evaluation

III. Influential Features

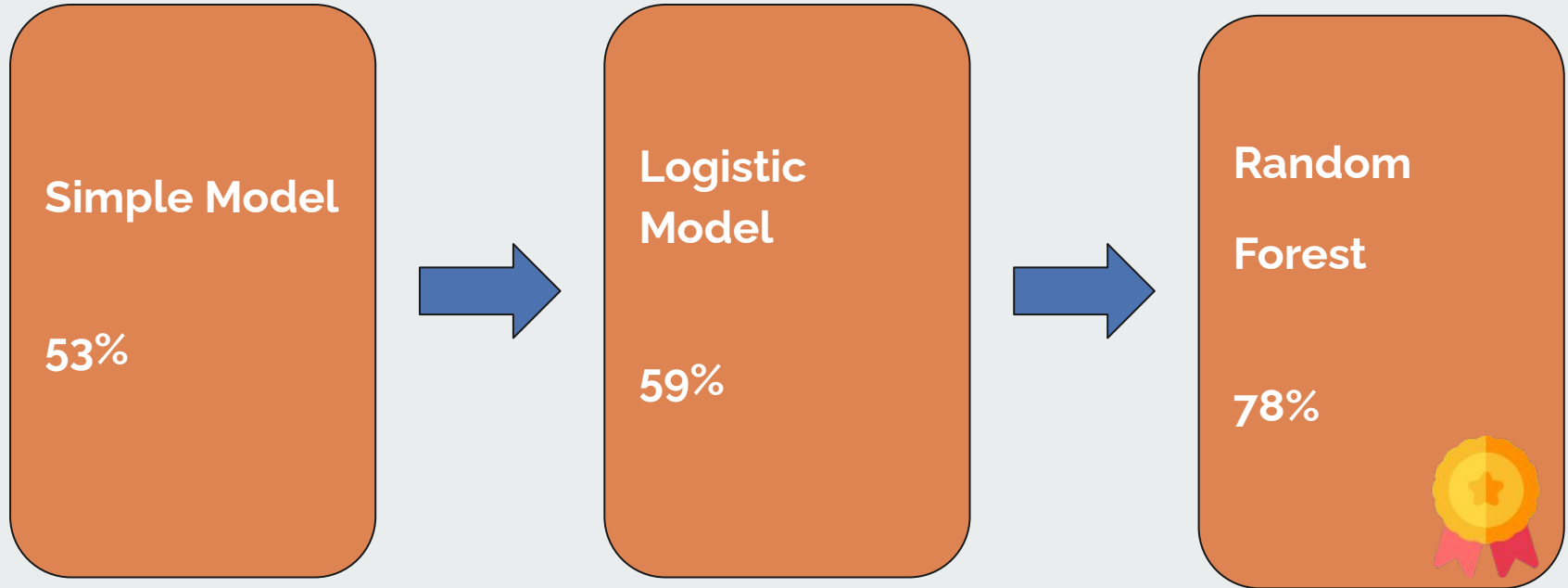


Model Analysis: Recall



**“It is better to be safe than
sorry”**

Model Analysis: Best Model 78% Recall Score



Model Analysis: Top 3 Influential Features



Age



Extraction Method



Location



Meet Elizabeth ...

Meet Elizabeth



- **43% of Tanzanian citizens lack basic access to water**
- **Cholera and Malaria make up 50% of diseases that affect Tanzanians**

Recommendations

- I. Older Wells Need Attention
- II. Region Matters (Inland & SE)
- III. Replace Other & Motor-pumps



Future Steps

- I. Gather Weather Data
- II. Frequency of Use
- III. Precise Location Data



The Team



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Questions?



Appendix

Image Sources:

iStock

Flaticon

Unsplash

Data Sources:

DataDriven

LifeWater

The Water Project