Tanzanian Water Wells

By David Cruz and Reed Martinson

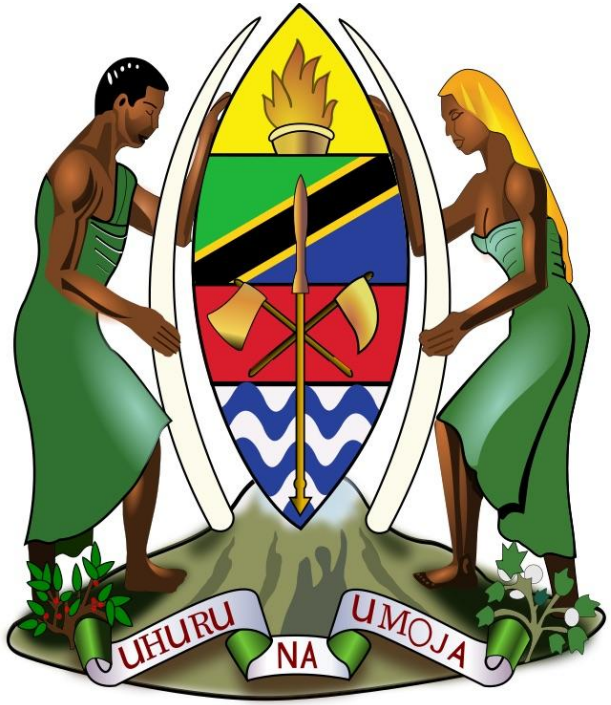
Business Problem

- Hired by Humanitarian Relief Co. (HRC) to help them reduce the amount of technicians sent to fix wells

- Make a model to predict functional wells while making sure everyone gets water.

Data

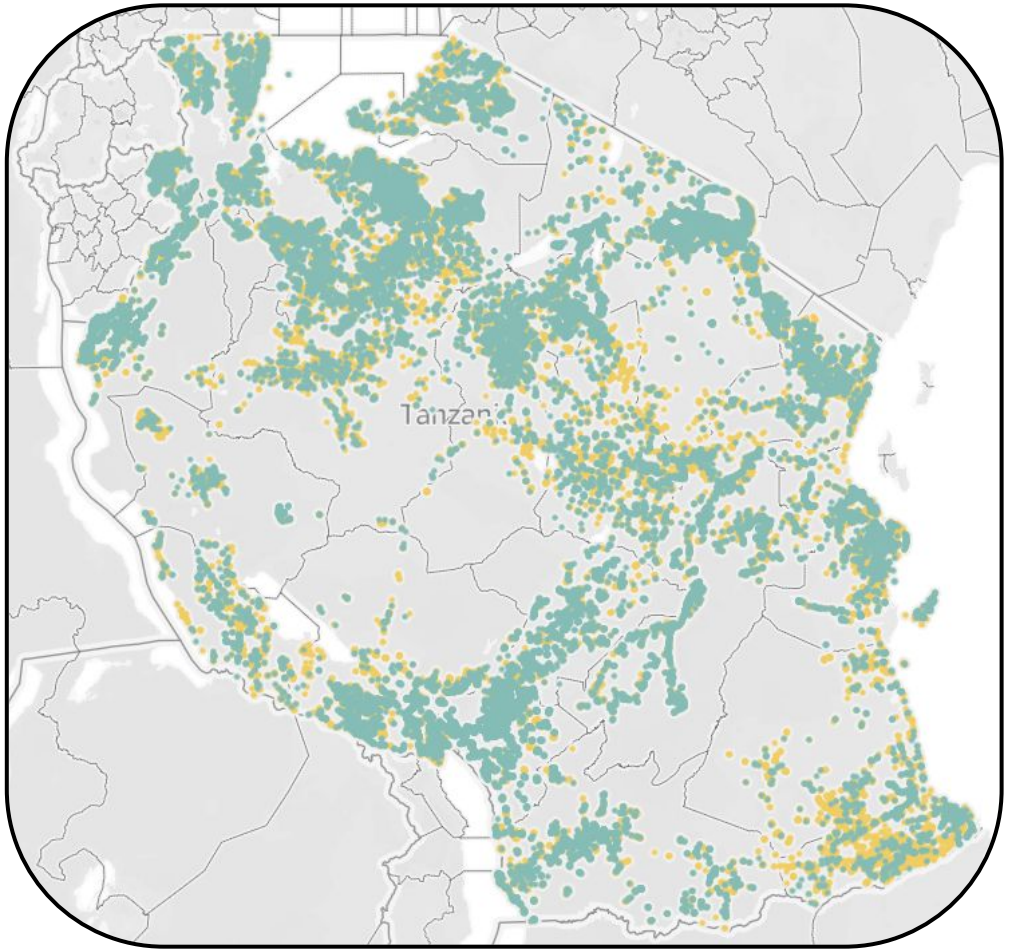
- Data set from Taarifa and Tanzanian Ministry of Water
- 59k entries on Tanzanian water wells
  - Region, population, year, sea level
- Data collected from the 1970s to the early 2010s



Tanzania Map

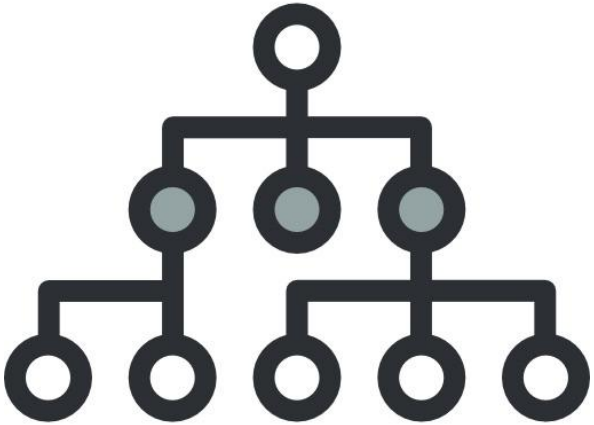
Functional -

Non-Functional -



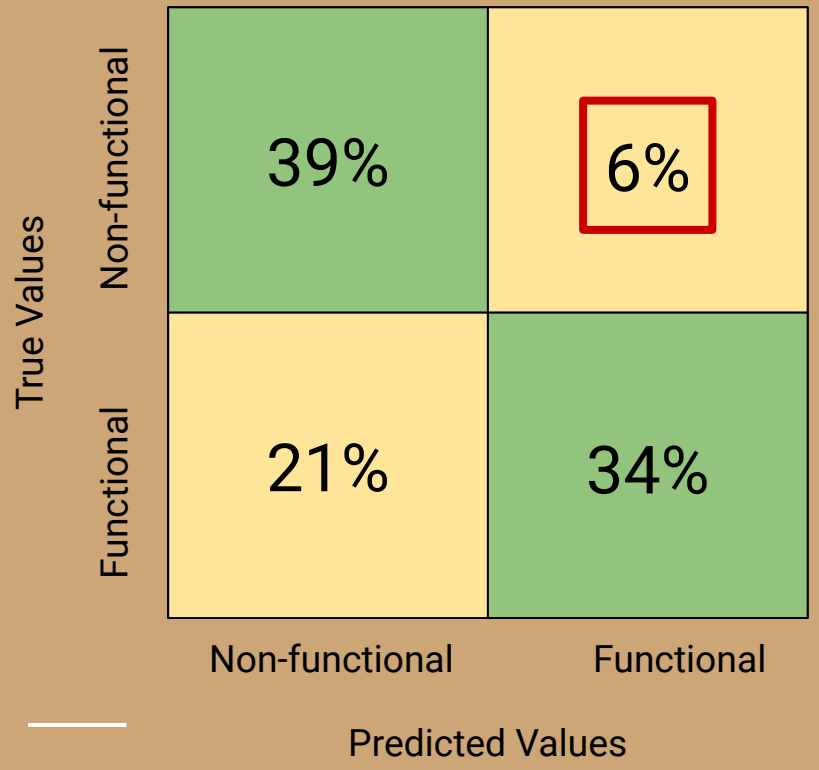
Approach

- Created model on 44.5k entries
    - XGBoost Model
    - Improving upon weaker models
- Filtered out irrelevant data
- Prioritize people getting clean water



Results

- 14.8k entries
- False positive rate 6%
- Model is 84% precise



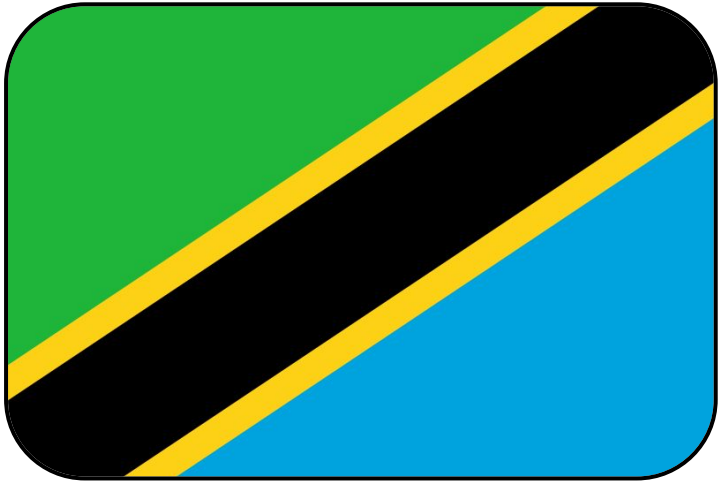
Conclusions

- Reduced technicians checking wells by 40%
    - 14.8k to 8.9k
- Missed 900 wells!

Further Research

- Explore different models that would give more insight on important variables

- Improve current model to be more accurate



Thank you!

Questions?

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