



# Water wells Tanzania

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# Overview

Over the past couple of years, tanzanians have been asking for help from the government yet things have remained quiet .

Over the past few years , tanzanians have been experiencing the abundant supply and availability of water yet after doing careful research and analysis we come to the conclusion that there is presence of wells just that the government is being lazy and not available to care for the wells.



# PROBLEM STATEMENT

Tanzania, as a developing country, struggles with providing clean water to its population of over 57,000,000. There are many water points already established in the country, but some are in need of repair while others have failed altogether.





# Business understanding

For this our main goal is to come up with analysis about different wells that need attention especially maintenance and different ways to help tanzania's avoid going through doubtful and struggling times yet there are plenty of wells.

Many wells across the country, particularly in rural and underserved areas, are non-functional, poorly maintained, or have completely failed due to a lack of regular upkeep, technical expertise, and financial resources. This situation exacerbates water scarcity, forces communities to rely on unsafe water sources, and increases the prevalence of waterborne diseases.

# MODELLING AND DATA EXPLORATION

We were able to get data from a tanzanian source and using the data we were able to create analytic models that will aid in our problem solving.

Using the data, we created models like the logistic regression and even decision trees to help come up with clear analysis for this project.

Classification was abit hard due to the large amount of data but using just a sample of 10 -20 values , we were able to come up with classification matrices and even an accuracy score of 0.75 which clearly translates to a high positive rate for the values.

|                         | precision | recall | f1-score | support |
|-------------------------|-----------|--------|----------|---------|
| functional              | 0.74      | 0.87   | 0.80     | 3197    |
| functional needs repair | 0.45      | 0.15   | 0.22     | 461     |
| non functional          | 0.76      | 0.67   | 0.71     | 2189    |
| accuracy                |           |        | 0.74     | 5847    |
| macro avg               | 0.65      | 0.56   | 0.58     | 5847    |
| weighted avg            | 0.73      | 0.74   | 0.72     | 5847    |

Overall accuracy score 0.7400376261330597  
 Overall precision score 0.7257561850132295  
 Overall recall score 0.7400376261330597  
 Overall F1-score 0.7225622126097963



# RECOMMENDATION

Using the data and the accuracy score , we conclude and say that different sites require major changes and maintenance.

Starting the projects at the moment is the better choice and if we continue pushing the maintenance of our wells , tanzanians will become unrestful and start negative proceedings and protests leading to resistance from our own citizens.

# Next steps .....

## 1. Conduct a Needs Assessment

- **Objective:** Identify the current state of wells, their functionality, and the specific maintenance challenges.
- **Actions:**
  - Survey existing wells to determine the number of functional, non-functional, and partially functional wells.

## 2. Build Local Capacity

- **Objective:** Train local technicians and community members to manage and maintain wells.
- **Actions:**
  - Organize training workshops on well repair, maintenance, and water quality testing.



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## 3. Implement Pilot Projects

- **Objective:** Test and refine maintenance strategies in selected areas.
- **Actions:**
  - Identify pilot communities with high needs and willingness to participate.

## 4. Scale Up and Replicate

- **Objective:** Expand successful maintenance practices to other regions.
- **Actions:**
  - Use lessons learned from pilot projects to refine the maintenance model.