MO-re Water Advisors

Tanzanian Water Pumps

Water.Org

Meg Boland, Ogo Ndugba

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Data & Methods

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Next
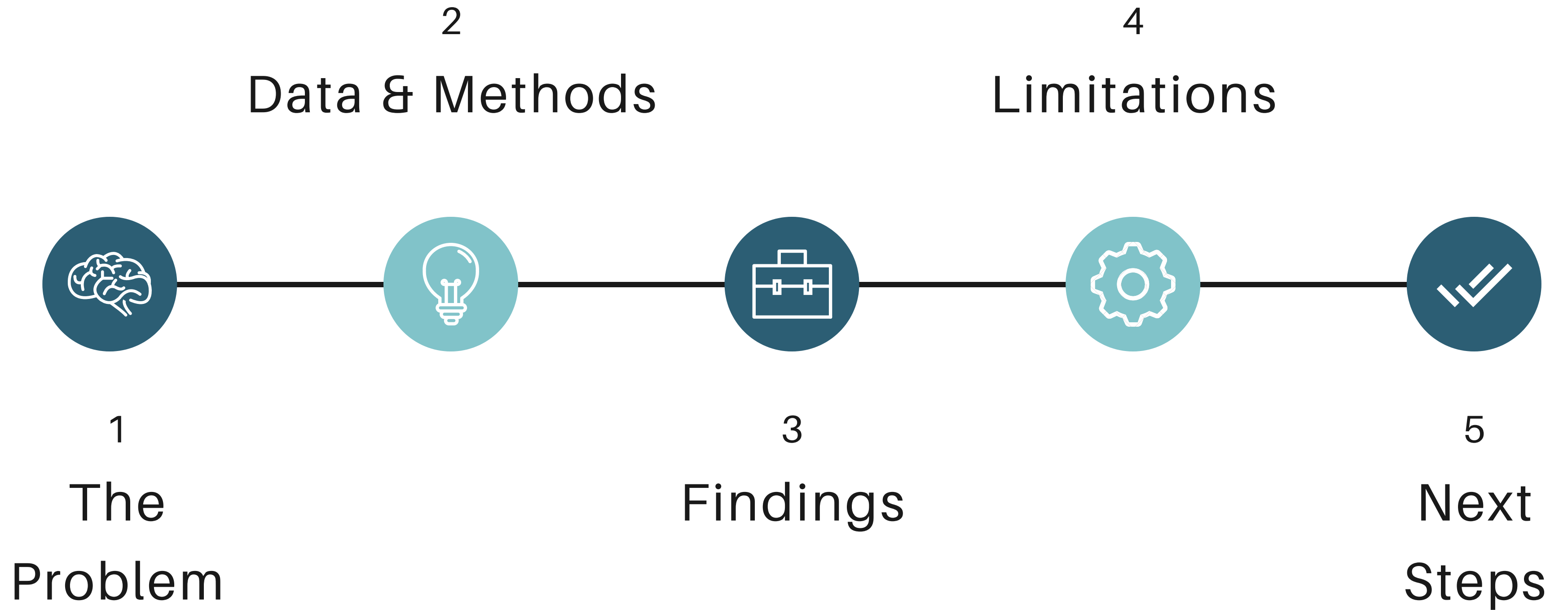
Steps

THE
WATER PROBLEM

Water Access in Tanzania

64%
of population lives in rural communities

4 out of 10
Tanzanians lack basic access to safe water

$55 million USD
Invested by the MCC on water access projects

Sources:

Water Pipe Repair Strategy

Examine the state of water pumps nationally

Create a water status prediction tool
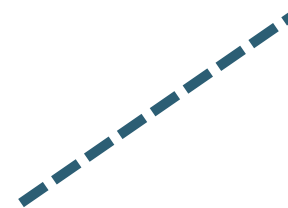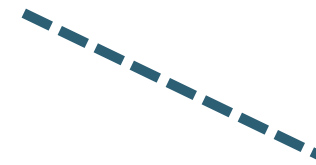
Focus resource allocation

DATA & METHODS

Data Based Approach
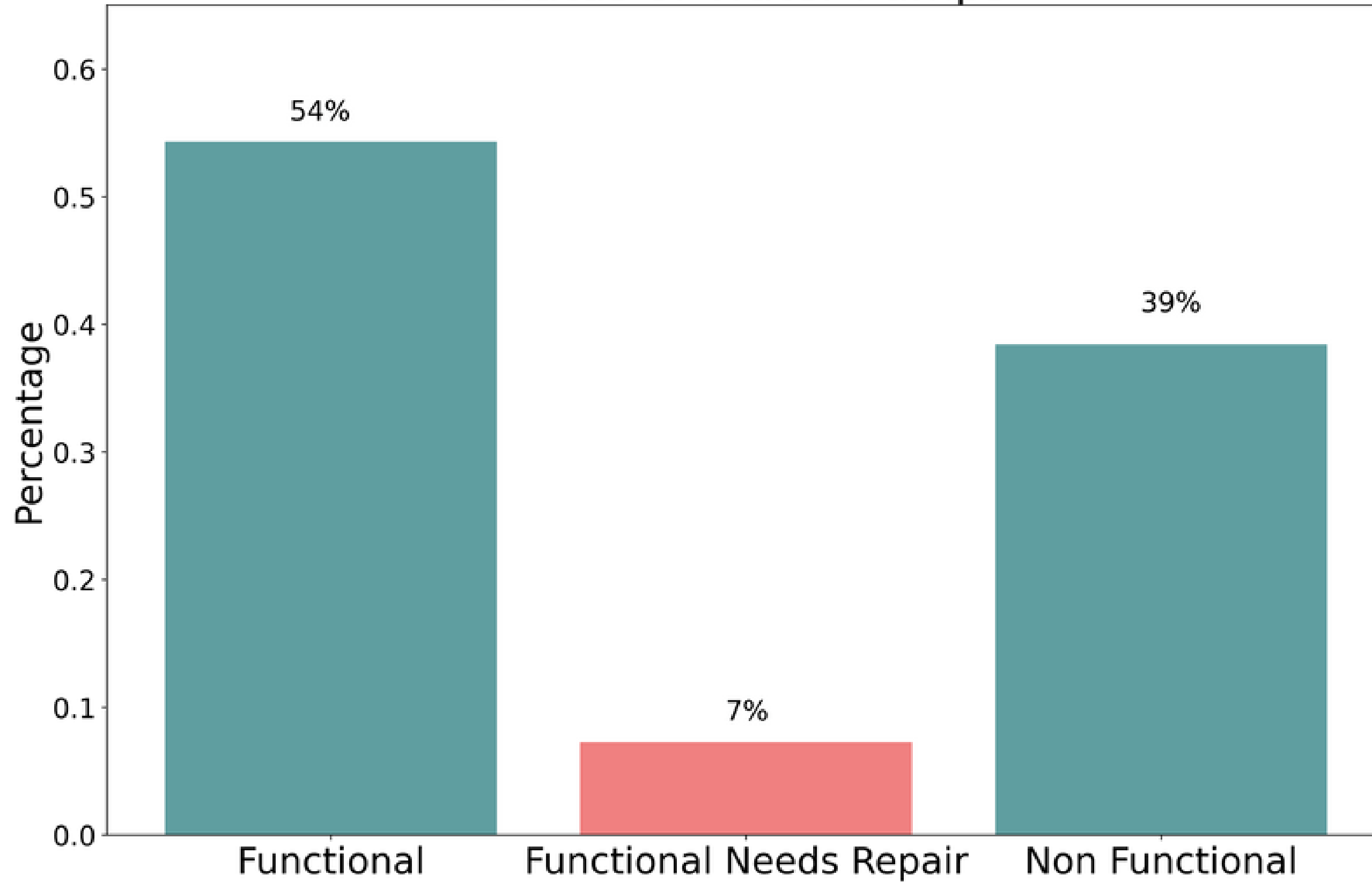
01   Data from 59,400 water pumps

02   Iterative Machine Learning Process

03   Precision based benchmark

Status of Water Pumps

MODEL FINDINGS

Predictors of Failing Water Pumps

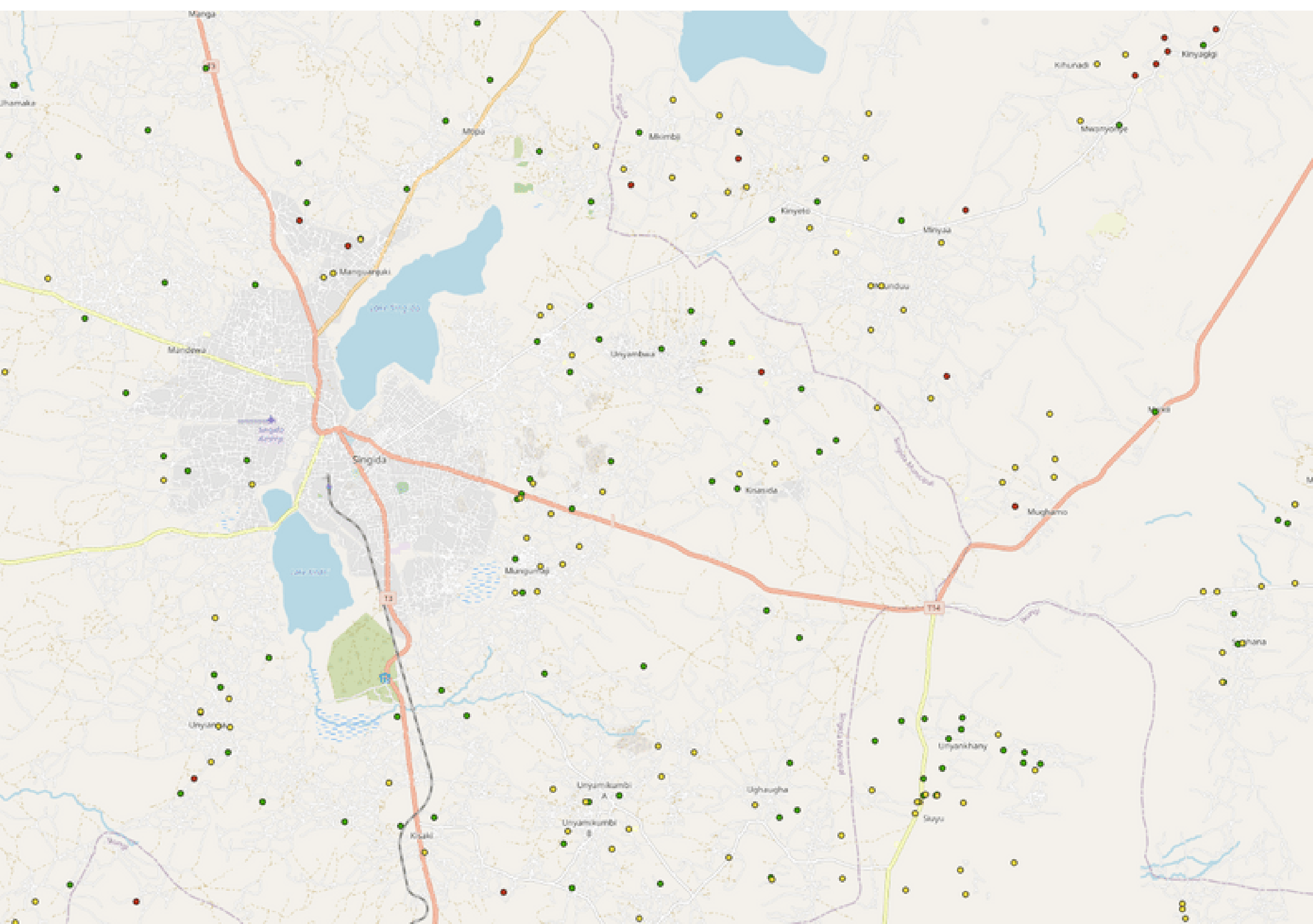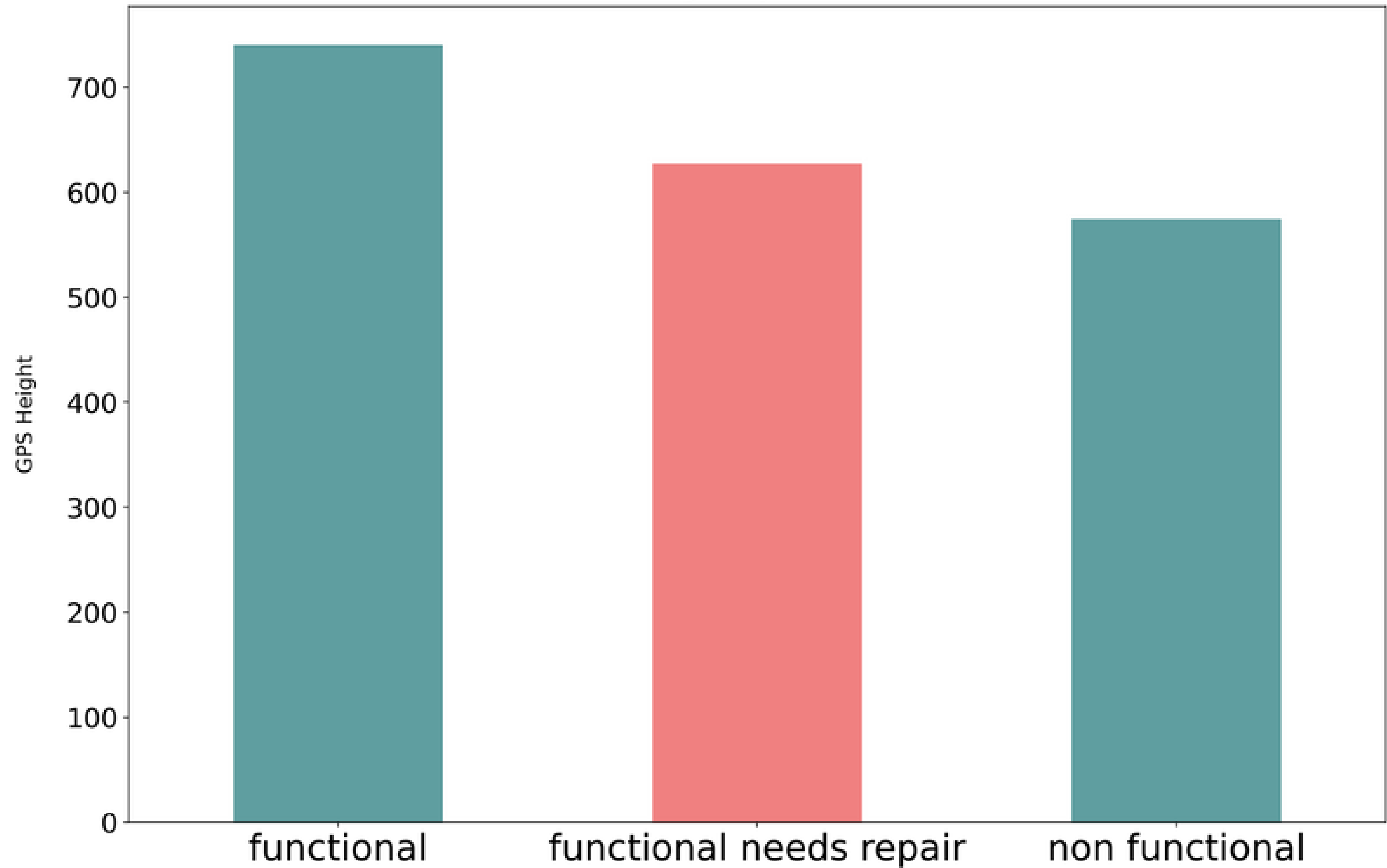1 **Location of Water Basin**

2 **Altitude of the Water Pump**

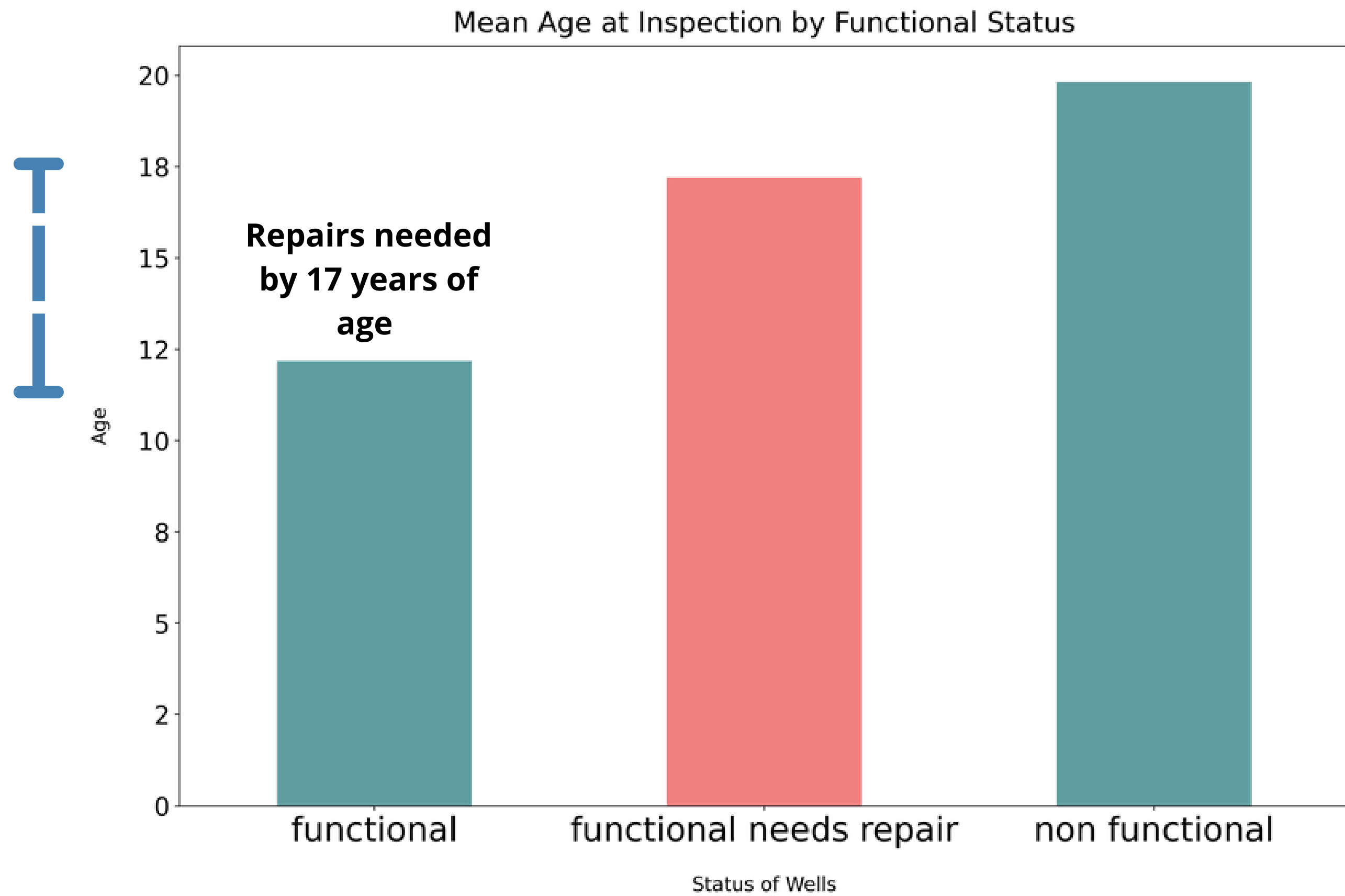3 **Age at Inspection**

Functional
Needs Repair
NonFunctional

80% of population living in Internal Basin experience water scarcity

Source: Tanzanian Ministry of Water

Mean GPS Height by Functional Status

Mean Age at Inspection by Functional Status

Predictive Model

80% Accurate

64% confidence in repair predictions

Good predictor of failed water pumps

Limitations of our Predictive Model

- Poor data quality

- Data imbalance

- Low ability to predict all water pipes needing repair

Future Needs
for Better Predictor

01 Standardized data collection

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02 **Inspect design of higher altitude
pumps**

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03 Better record keeping on pump age

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THANK YOU

We look forward to working with you

CONTACT US

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