

DATA MINING THE WATER TABLE

# PUMP IT UP

Driven Data Competition



# AGENDA

BACKGROUND

PURPOSE

INSIGHTS

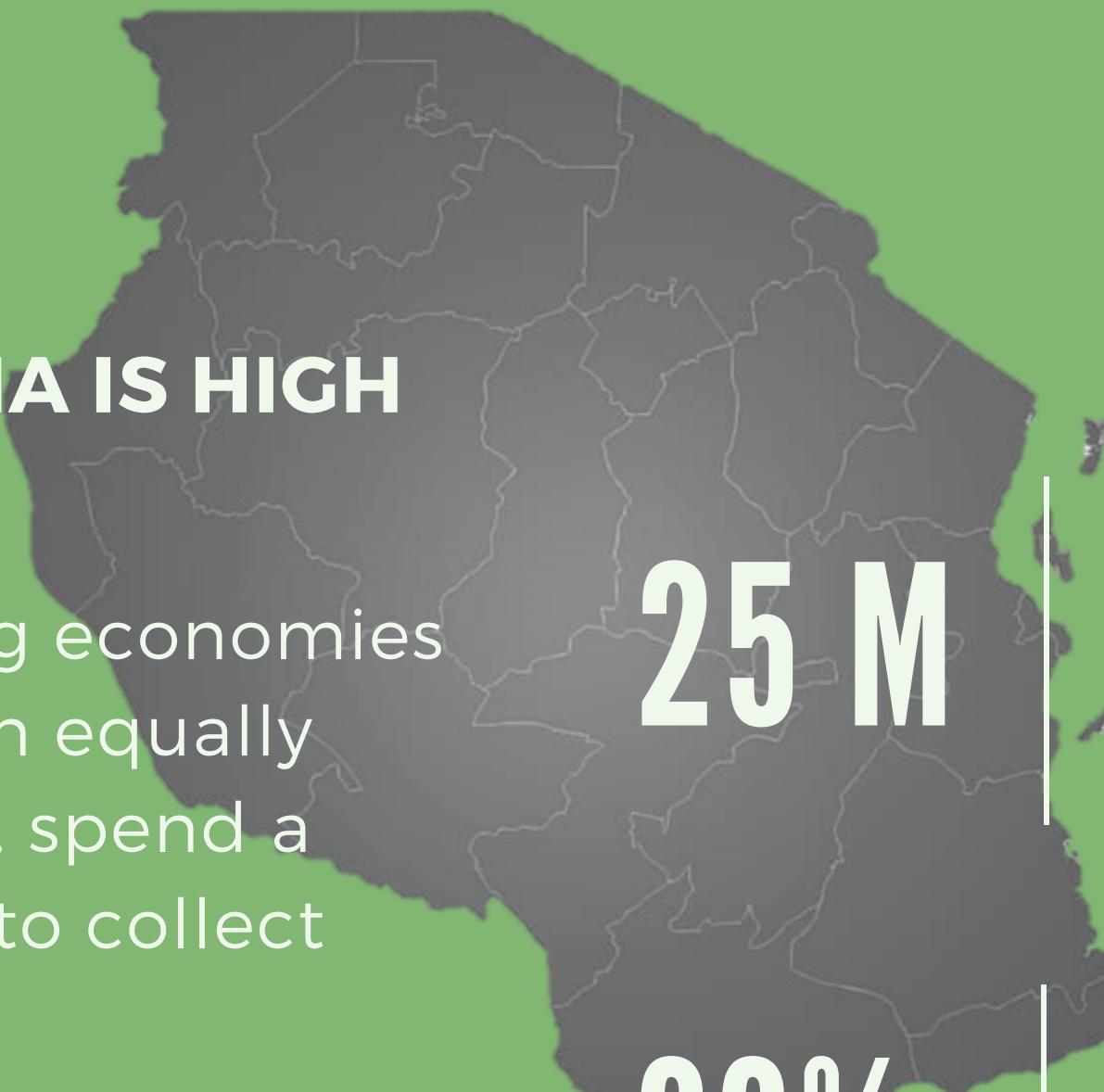
MODEL/NEXT STEPS

HOW YOU CAN HELP

# BACKGROUND

## DEMAND FOR WATER IN TANZANIA IS HIGH

- Tanzania population - 57 Million
- Tanzania is one of the fastest growing economies in Africa, but not all areas have grown equally
- People, particularly women and girls, spend a significant amount of time traveling to collect water



Statistics gathered from [water.org](http://water.org)

Lack access to safe  
drinking water

of the population  
living in rural areas are  
living in poverty

is the average life  
expectancy in  
Tanzania compared  
with the global  
average of 72.6 years.



# PROJECT PURPOSE

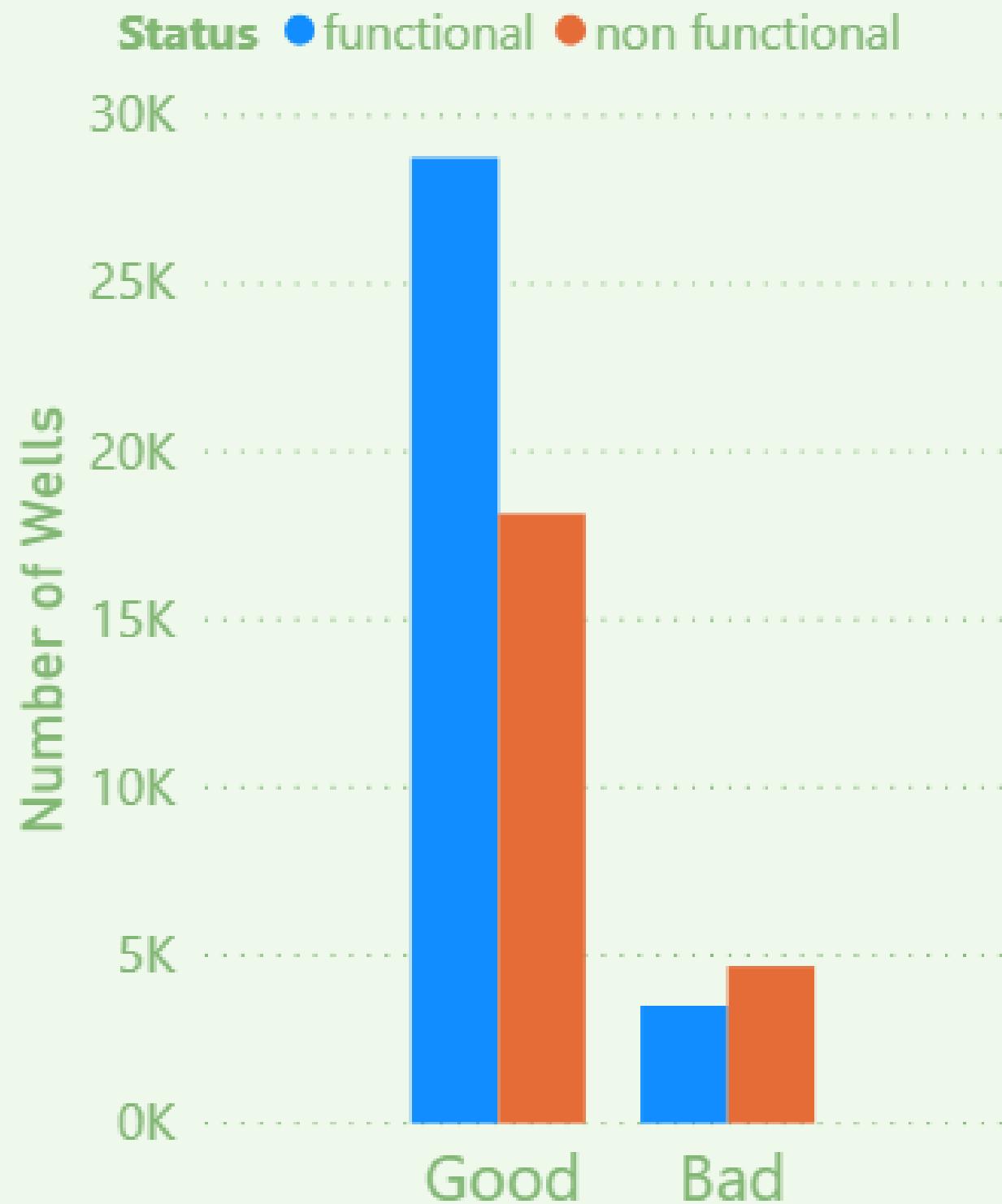
Use Data from Taarifa & the Tanzanian Ministry of Water to predict the condition of different water pumps in Tanzania in order to optimize service scheduling

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# Tanzania Water Well **KEY INSIGHTS**

\*All charts (in the next slides were created using data from the Taarifa/Tanzania Minstry of Water Train Data Set with 59,400 rows of data

# Water Quality

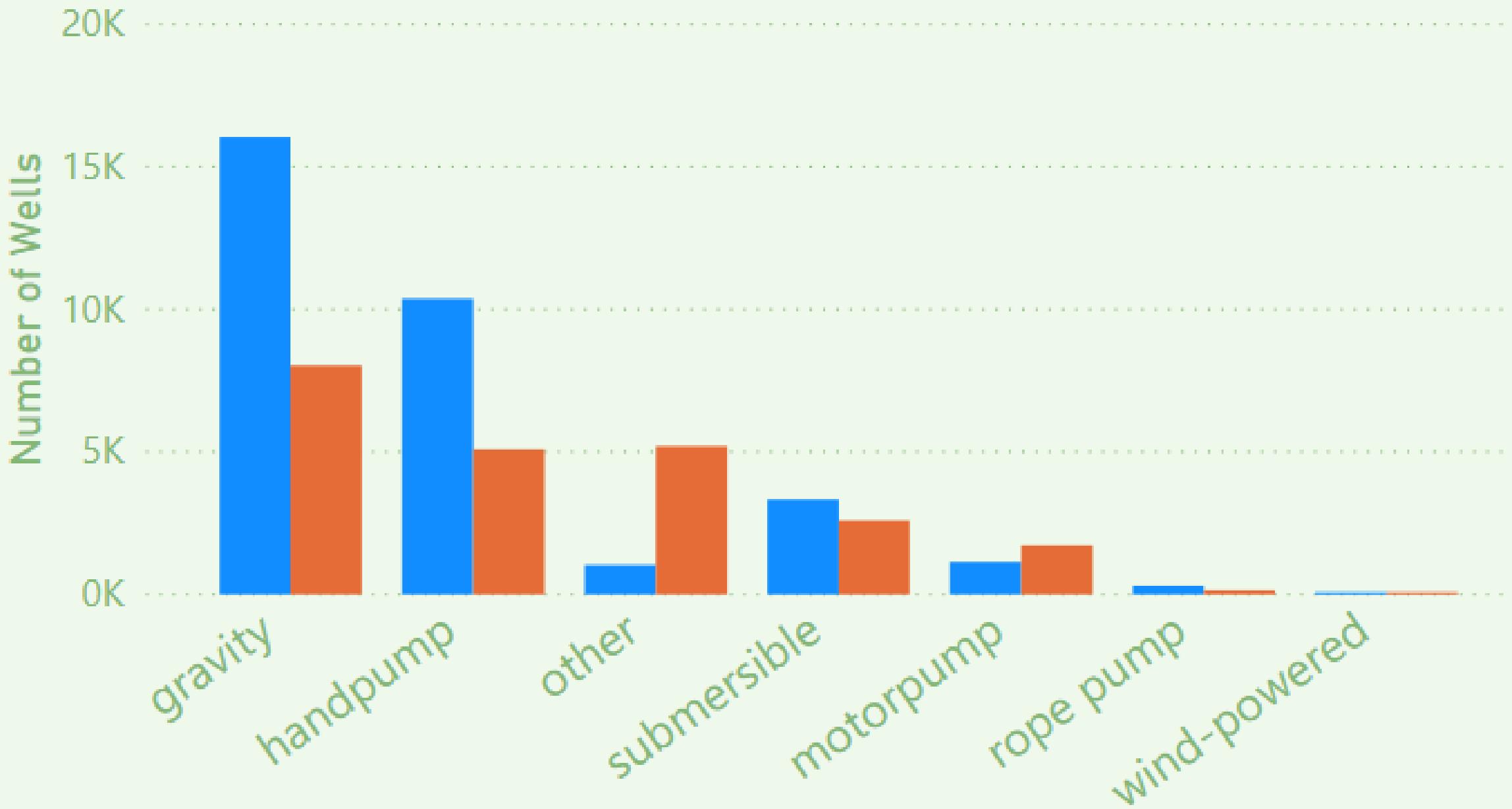


**MOST WELLS HAVE GOOD  
WATER QUALITY BUT ..**

Roughly 17,000 wells with  
good water quality are  
currently non-functional.

## Lift Method

Status ● functional ● non functional

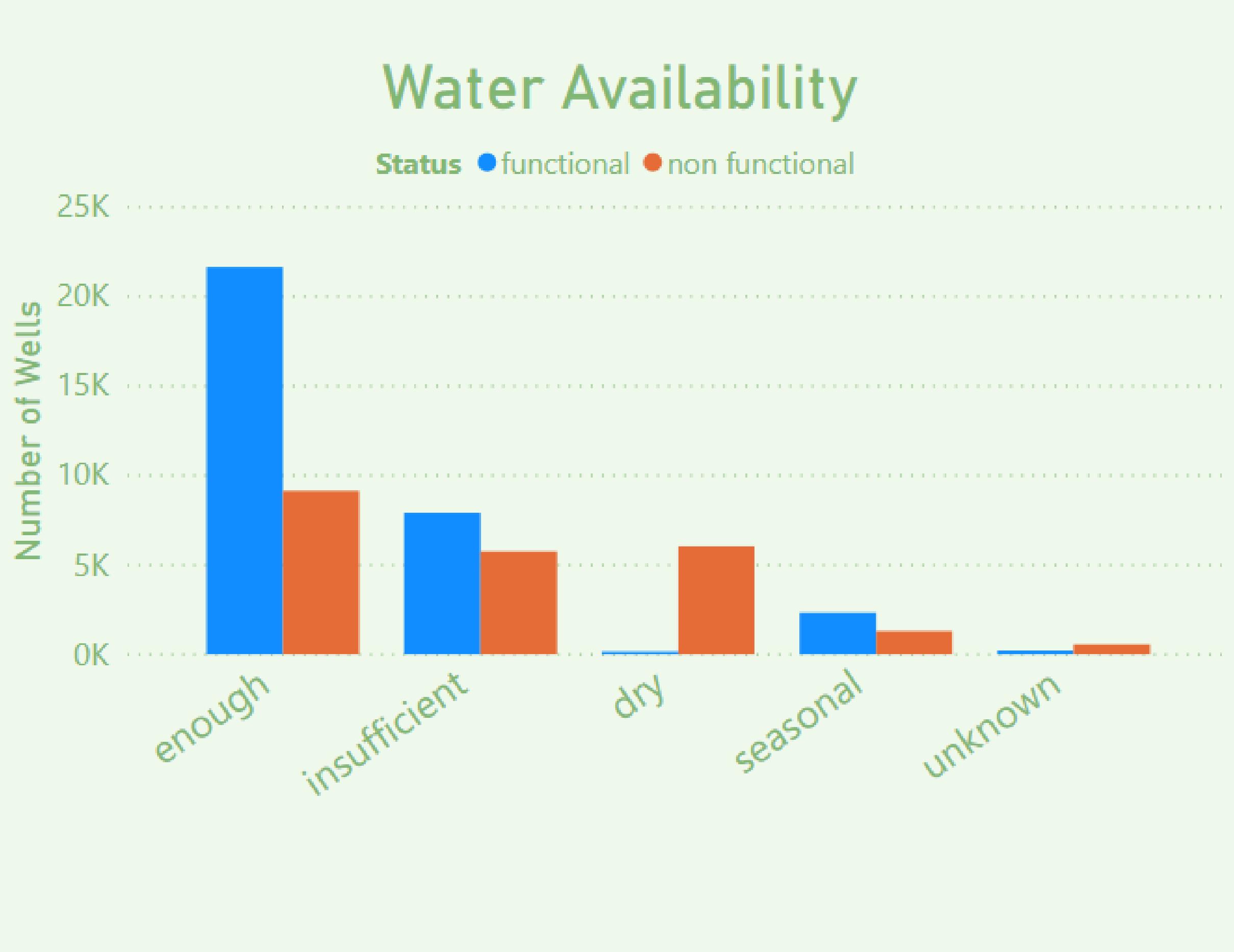


## GRAVITY & HANDPUMP WELLS FAIL LESS ..

Both submersible, and motorpumps tend to fail at a higher rate than gravity and handpump wells -- likely due to the increase in maintenance necessary.

# 9K WELLS

That are currently non functional  
have adequate water availability  
that currently can not be  
accessed.



# OUT OF 23,000 NON FUNCTIONING WELLS, HOW DO WE PRIORITIZE WELL WORK?

Water quality  
must be

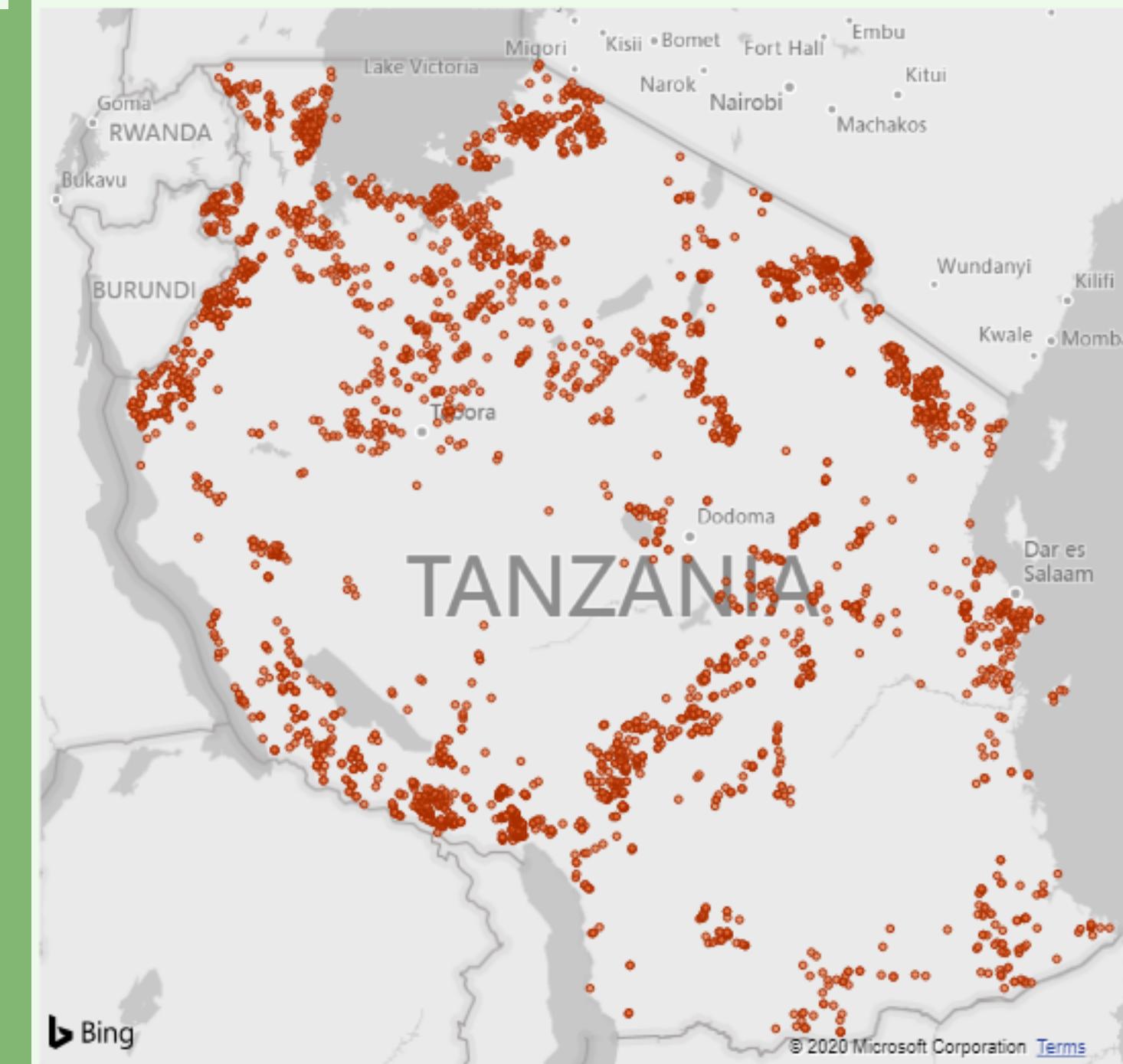
GOOD

Lift method  
should be

GRAVITY/  
HANDPUMP

Water  
availability  
should be

HIGH



4500 WELLS MEET THIS CRITERIA AND SHOULD BE  
FURTHER LOOKED INTO AS INITIAL CANDIDATES

**OUR MODEL  
RANKS IN THE TOP 15%  
81% ACCURACY**

WITH AN ACCURATE MODEL, WE  
CAN IMPROVE MAINTENANCE  
OPERATIONS AND ENSURE THAT  
CLEAN, POTABLE WATER IS  
AVAILABLE TO COMMUNITIES  
ACROSS TANZANIA

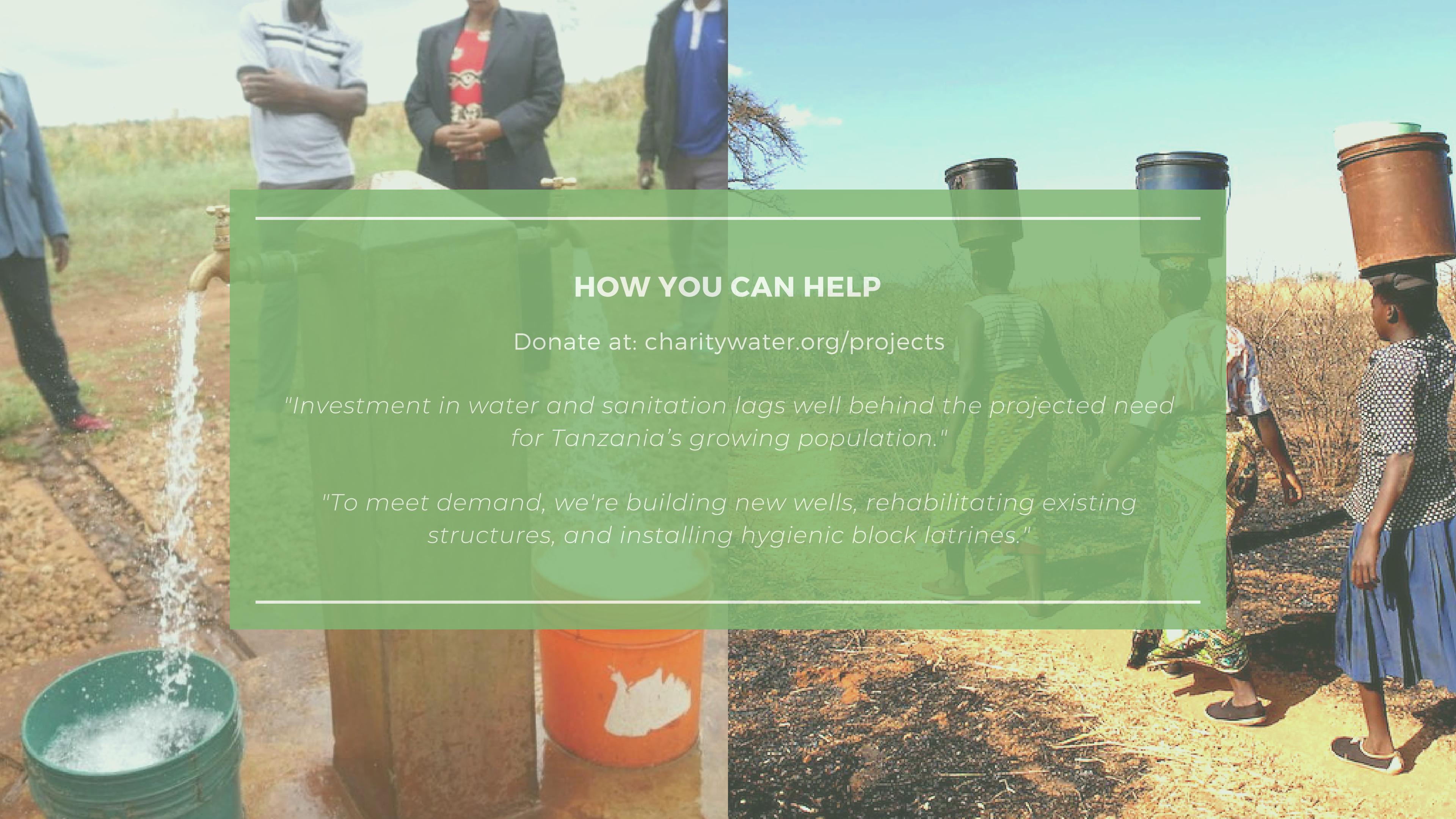
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# NEXT STEPS

A large, detailed illustration of an African elephant standing in a grassy savanna. In the background, there are a few acacia trees and a clear blue sky.

PRIORITIZE ALLOCATION OF  
RESOURCES TO FIX NON  
FUNCTIONAL WELLS THAT HAVE  
ENOUGH WATER IN HIGHLY  
POPULATED AREAS

IDENTIFY THE FACTORS OF NON  
FUNCTIONING WELLS LIKE  
TECHNOLOGY USED AND  
INSTALLERS, AND USE THIS IN THE  
CONSTRUCTION AND  
MAINTENANCE OF NEW WELLS



## HOW YOU CAN HELP

Donate at: [charitywater.org/projects](http://charitywater.org/projects)

*"Investment in water and sanitation lags well behind the projected need for Tanzania's growing population."*

*"To meet demand, we're building new wells, rehabilitating existing structures, and installing hygienic block latrines."*

# QUESTIONS?

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