

# TANZANIA'S WATER QUALITY ANALYSIS AND PREDICTIVE MODELS REPORT

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# BUSINESS PROBLEM

Access to safe water is critical to human health

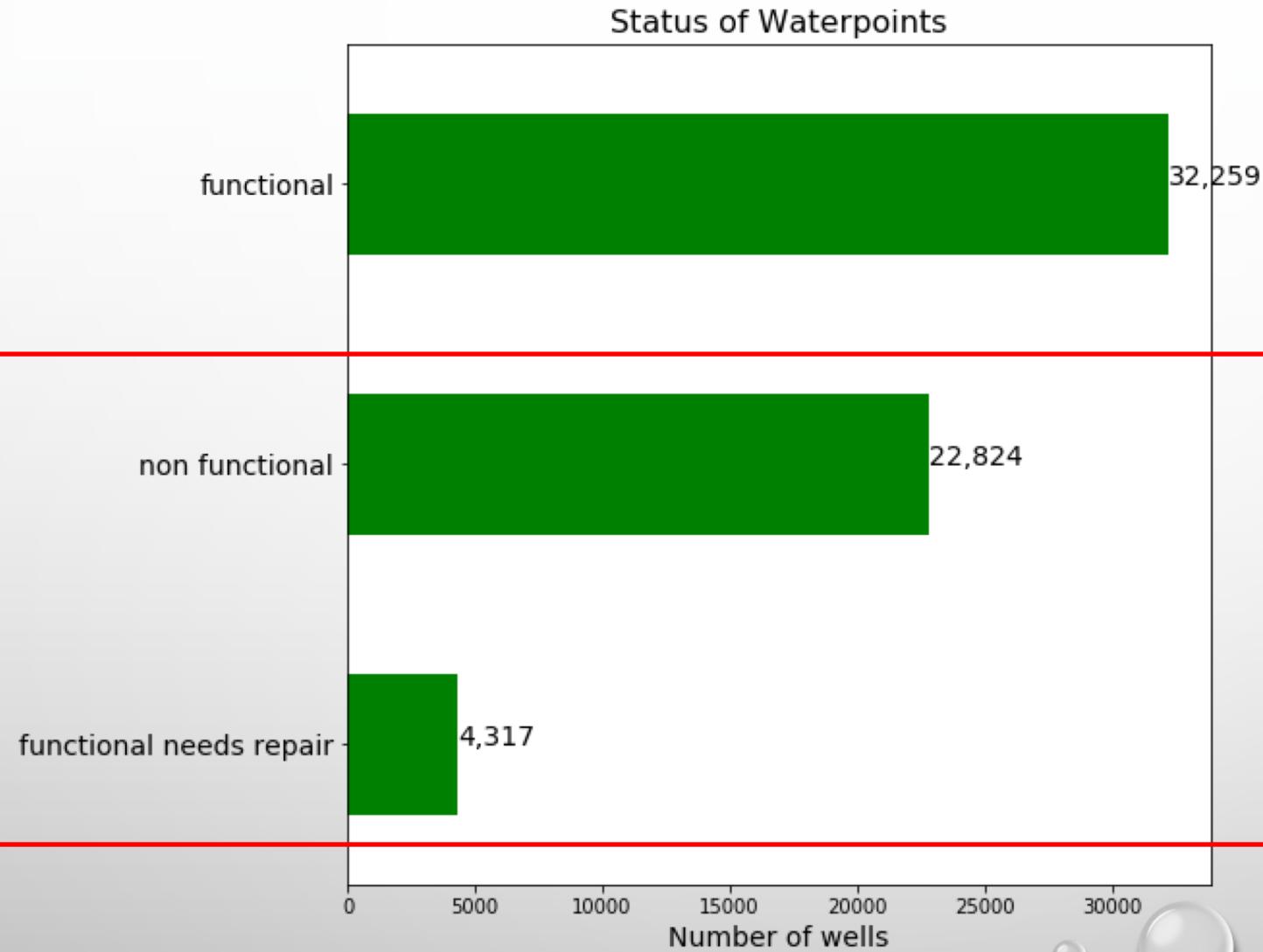
However...

4 million people in Tanzania lack access to an improved source of safe water

**What is the problem?**



# HOW IS THE STATE OF WATERPOINTS IN TANZANIA?



**How can we help?**

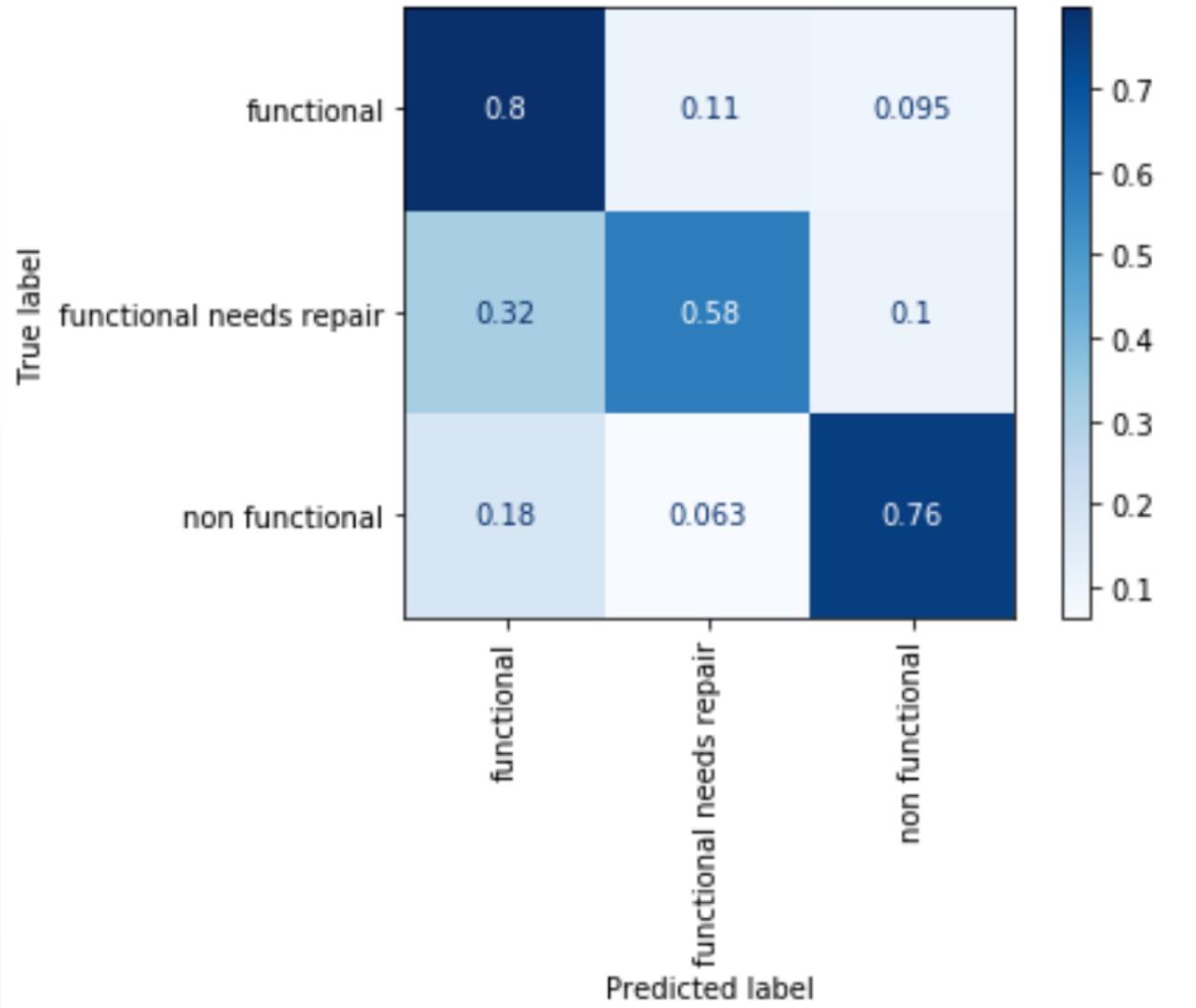
# IMPROVE MAINTENANCE OF WATERPOINTS

Understanding which waterpoints will fail can improve maintenance operations and ensure that clean, potable water is available to communities across Tanzania!

**Can we predict which waterpoints are faulty?**



# MACHINE LEARNING TO THE HELP

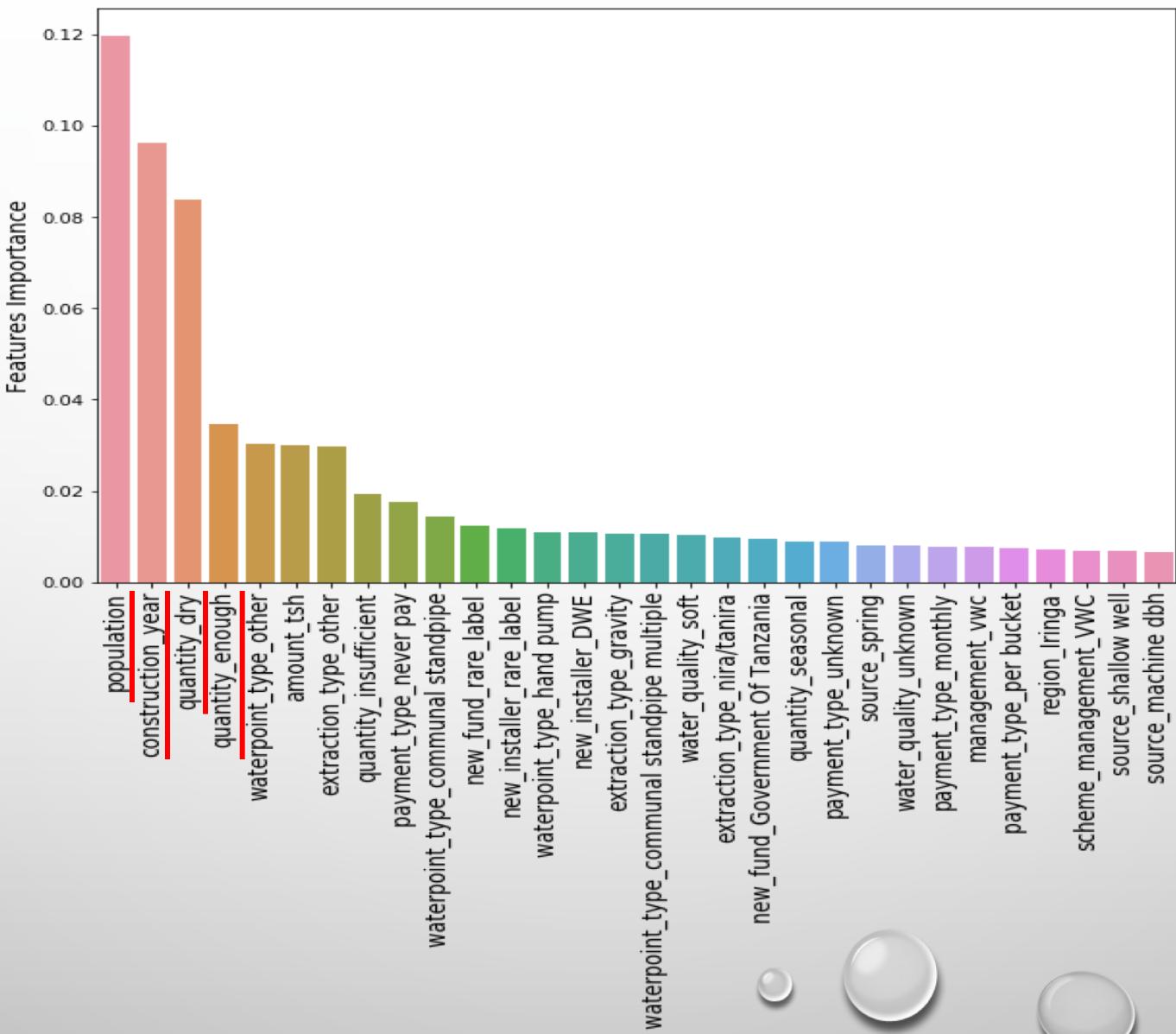


Model has 77% accuracy!

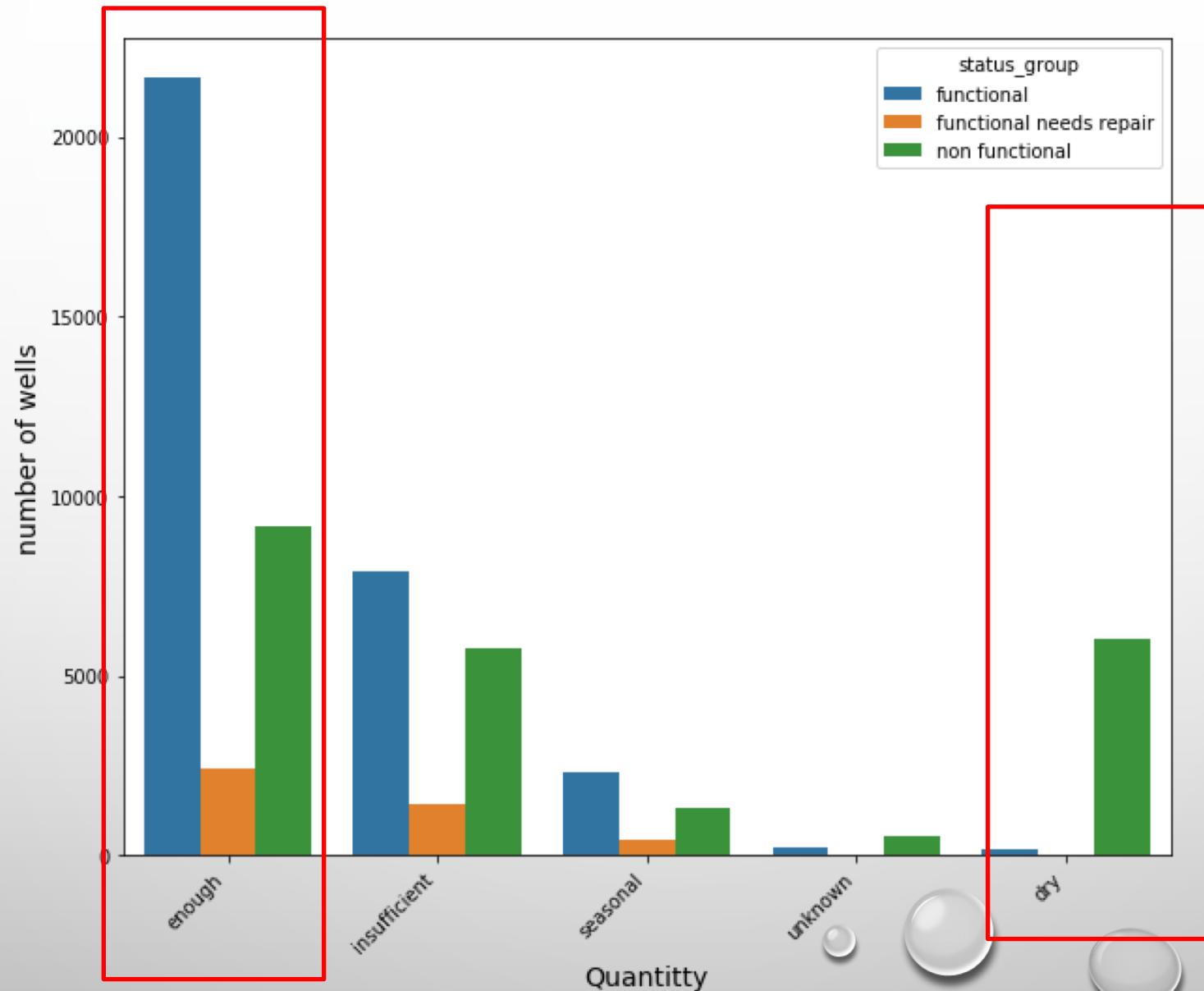
Predicts:

- ✓ 80% of functional waterpoints
- ✓ 58% of functional waterpoints that need repair
- ✓ 76% of non functional waterpoints

# WHAT FEATURES ARE KEY FOR FUNCTIONALITY OF WATERPOINTS?



# AVAILABILITY OF WATER AT THE WATERPOINT IS KEY!



# CONCLUSIONS

- ✓ Machine Learning can help anticipate which waterpoints are more likely to need maintenance in Tanzania, which can help maintain access to good quality water to the population.
- ✓ The number of people the waterpoints serve, their age and the amount of water that each waterpoints have are key determinants for their functionality



## CONCLUSIONS – Part 2

- ✓ The amount of water in each waterpoint seems to be particularly important to the functionality of each waterpoint, with waterpoints that are dry having a high importance in predicting functionality of the waterpoints



A collage of various languages spelling out "thank you". The words are in different colors and sizes, arranged in a cluster. Languages include German (danke), Chinese (謝謝), Turkish (teşekkür ederim), Russian (спасибо), Polish (dziękuje), Spanish (gracias), Arabic (مُشْكَرَة), Portuguese (obrigado), Thai (شكرا), Indonesian (terima kasih), Korean (감사합니다), Italian (grazie), French (merci), and Vietnamese (cảm ơn).

# Questions?