

Using Spatial Analysis in Strategic Decision- Making

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Disclaimer

- I am not an expert in public health!
- I can only take the easy questions at the end
- For all difficult questions, Dr. Boni Ale will be happy to help!



- Christian
- Ivorian / Cameroonian
- Husband and father
- Economics professor at Louisiana Tech University
- Data Science trainer
- Data Science and Economics consultant

Enough about me!

It's time to talk about you!

Congratulations!

- You have just been designated as the country's Minister for Health.

This is very exciting, but...

You are now facing two main challenges:

- You are inexperienced
- A global pandemic just broke out!

**The future of the nation
is in your hands!**

Strategy Board

1. Make an assessment of the “state of things”

- Where are all the health sites in the country?
- Do we have enough “appropriate” health sites for storing and handling the cure?
- Which health districts do not have “appropriate” health sites?

Strategy Board

2. Capacity building (upgrade health sites)

- Find the most ideal location in each health district
- Identify the health site which is closest to the location
- Are all “appropriate” health sites optimally located?
- Which health districts are completely okay (do not need intervention)?

Strategy Board

3. Risk assessments

- Which health districts have the highest population *densities*?
- Which health districts should we prioritize?

Not considered today

- Build or upgrade facilities? (which option is cost effective and least time consuming?)
- Optimal dispatch of the cure throughout the country using road network data
- The centroid method may not always be the best choice
- Some health districts may be so small that building/upgrading a health facility may not be ideal
- Many “appropriate” health sites are clustered so it may not be optimal to supply all of them with the cure due to its limited supply

Want to do the same for your country?

- Country + admin shapefiles: [The Humanitarian Data Exchange](#)
- Health sites point locations: The `{africhealthsites}` package, which pulls data from [healthsites.io](#)
- Road network data: [WFPGeoNode](#)

Thank you