Insert title of project here

Web address for GitHub repository

Name

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1 Rationale and Research Questions

For this project, we were interested in manure management and greenhouse gas emissions created by livestock. Our initial dataset considered methane, nitrous oxide, and carbon dioxide. Research revealed that "livestock are reckoned to be responsible for up to 14% of all greenhouse emissions from human activities" (BBC article). With such a substantial amount of human activities, we wanted to see how livestock factored into emissions. When considering different emissions types, we focused on methane because methane is a very detrimental greenhouse gas: it traps heat at a rate 25 times greater than carbon dioxide (BBC article). Methane gas explored here is produced by the anaerobic decomposition of manure stored or treated.

Question:

Question 1: Have methane emissions changed over time?

- Create time series of methane produced by one or two livestock for general trend
- Use CH4 emissions variable – want to see if the gigagrams of methane have increased over time
- Filter for one element for time series?

* Question 2: Does the average methane emissions rate differ between each animal category?* Specifically:

- Is there a difference in rate produced by each animal? Looking for statistical difference between the rates of different livestock
- Run an ANOVA test - check whether or not there is a significant difference between livestock
- Use the Implied emissions factor variable
- Make fancy summary tables

2 Dataset Information

Dataset used for this project was found from the Food & Agriculture Organization of the United Nations (FAO), specifically from FAOSTAT. FAOSTAT provides free access to statistics pertaining to agriculture and for over 245 countries. For this analysis, we focused on emissions in the United States. *more info on how data was collected*

Metadata!

Remember to create README file remmber to write csv's for all processed data

3 Exploratory Analysis

Data wrangling steps

Basic visualizations

4 Analysis

Nadia: Time series Kendra: ANOVA and grouping

5 Summary and Conclusions

Conclusions from time series and ANOVA Include normality test results

6 References

BBC citation article: https://www.bbc.com/future/article/20190806-how-vaccines-could-fix-our-problem-with-cow-emissions <add references here if relevant, otherwise delete this section>