Project 1: Data Analysis of Singapore's Rainfall and its influence on Singapore's Seafood Trade

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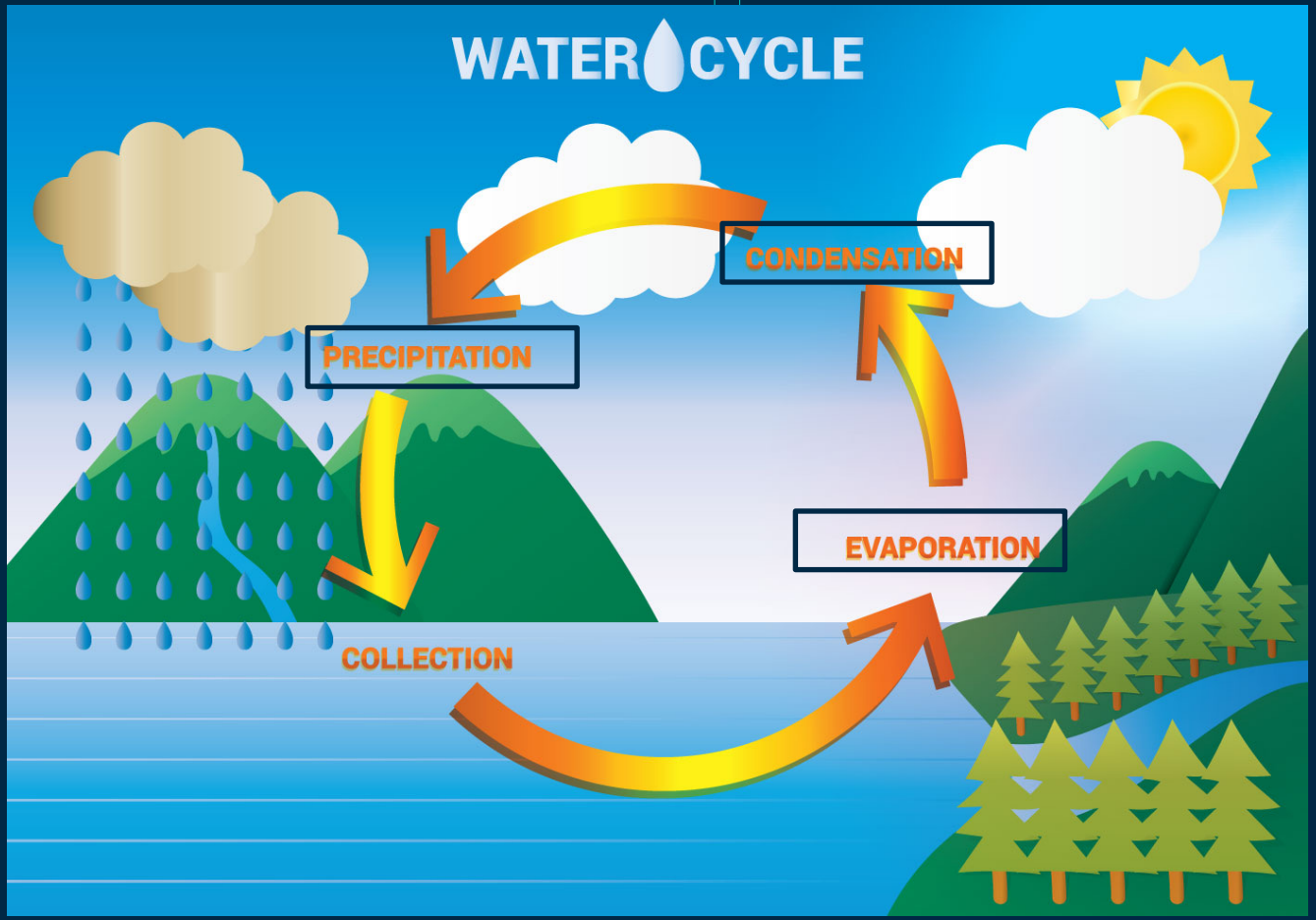

WATER CYCLE
CONDENSATION
PRECIPITATION
EVAPORATION
COLLECTION

Background

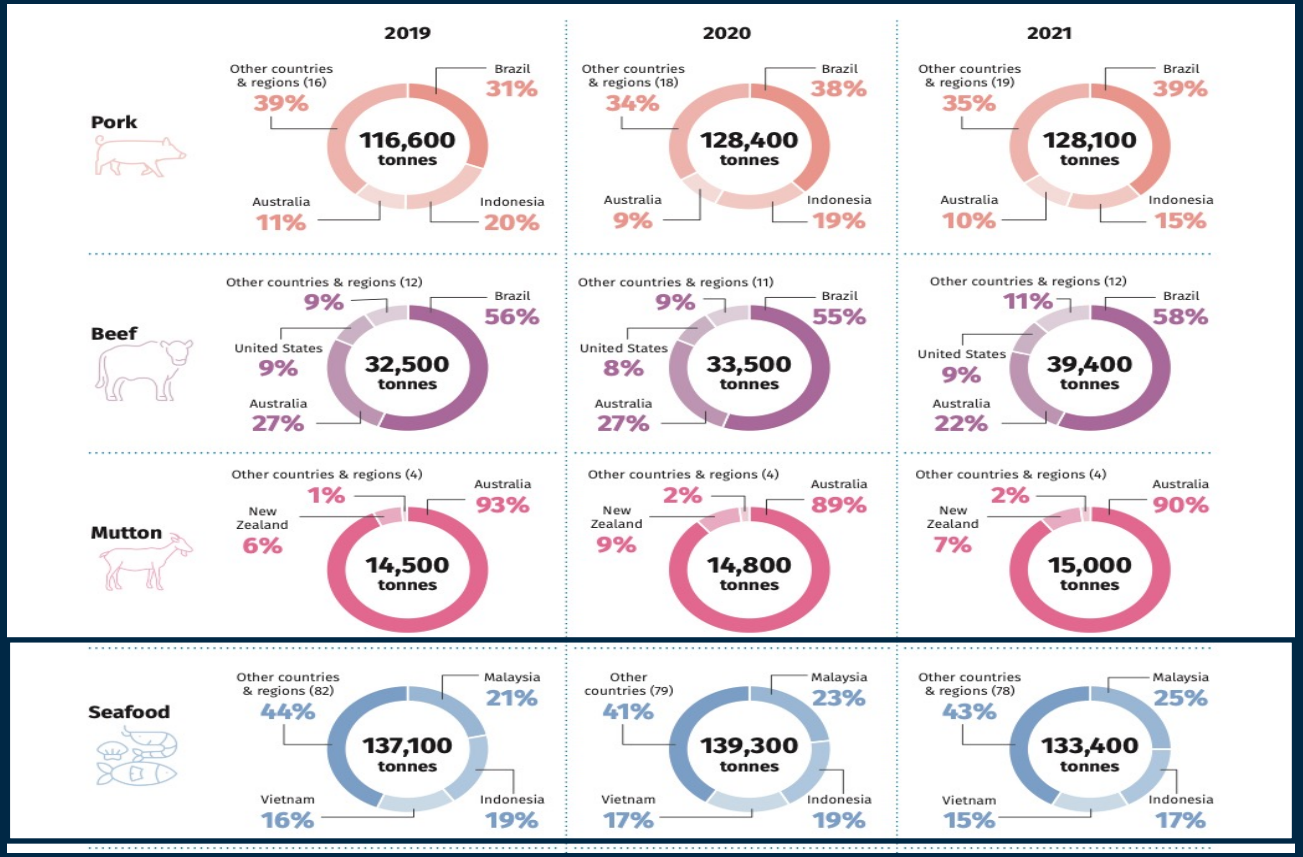
- Singapore is a tropical climate with abundant rainfall year round
- Proximity to the equator gives features such as high temperature, high humidity
- 2 Monsoon seasons: Northeast Monsoon, Southwest Monsoon
- Data Analyst employed by Singapore Food Agency

Problem Statement

How does Singapore's weather parameters affect the overall seafood supply in the market?

Research Findings

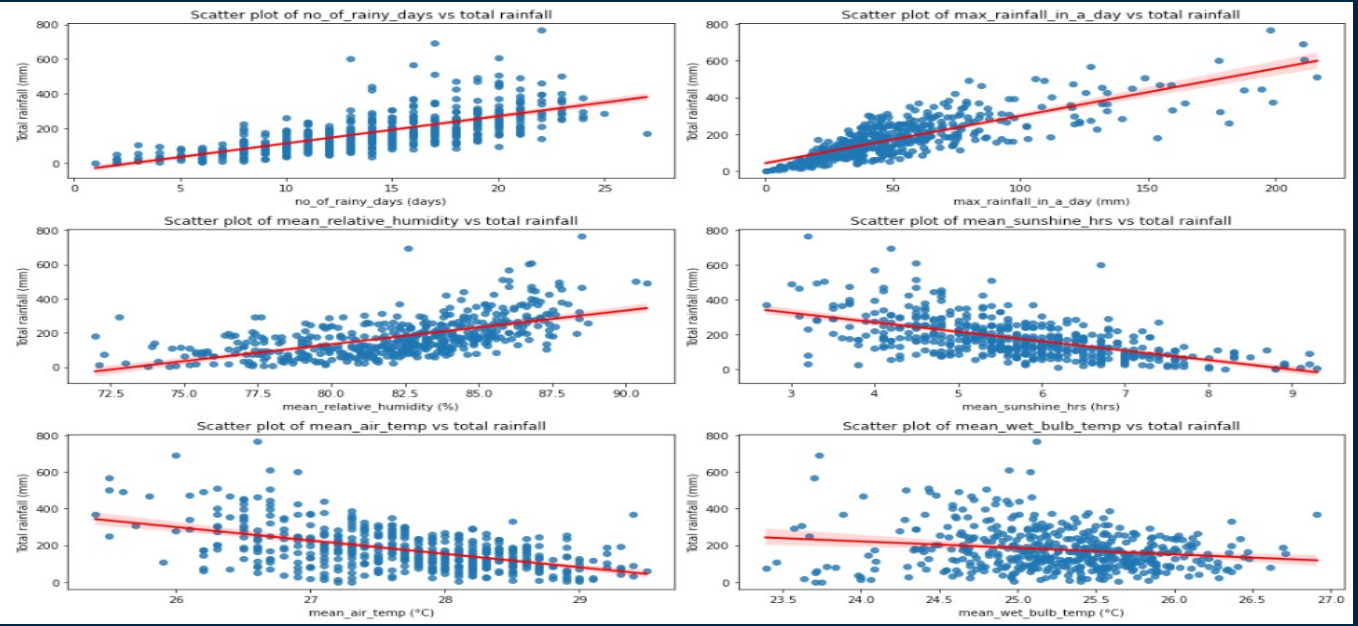
More than 90% of Singapore's food reserves are imported.



Source: https://www.sfa.gov.sg/docs/default-source/publication/sg-food-statistics/singapore-food-statistics-2021.pdf

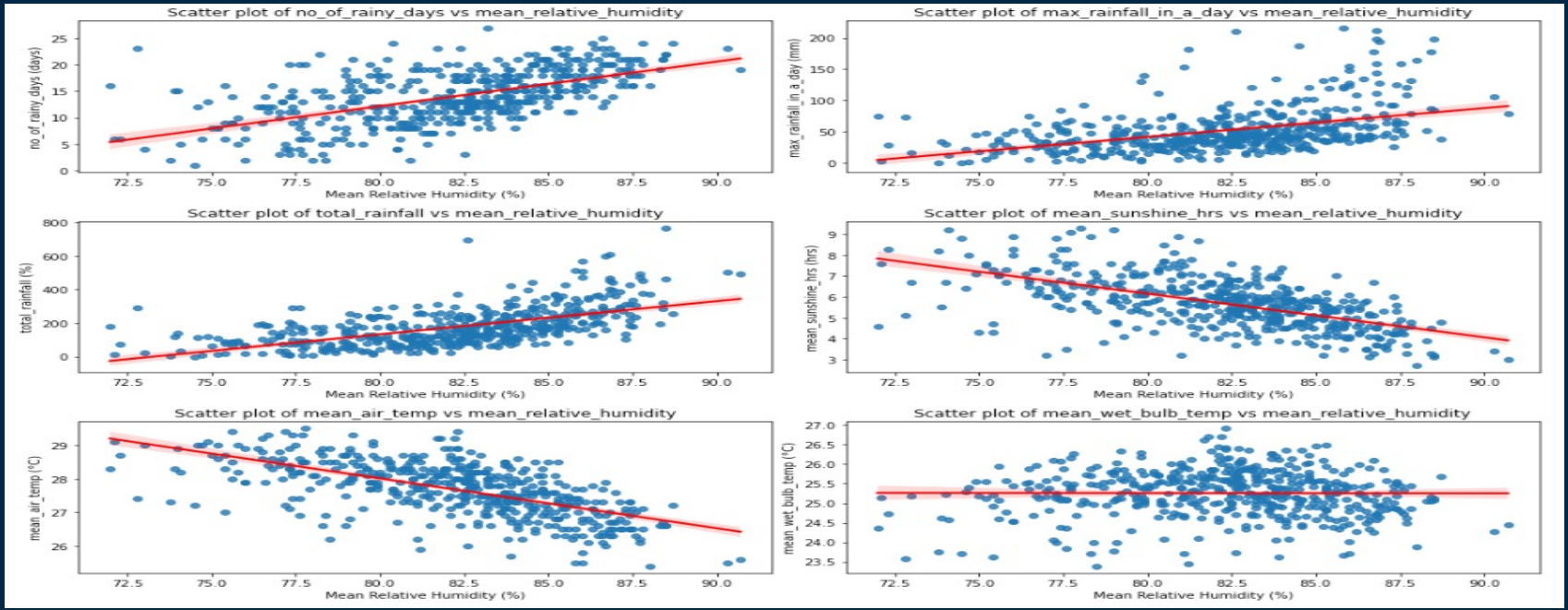
Technical Analysis

Analysis Trends of Total Rainfall & other Rainfall related parameters



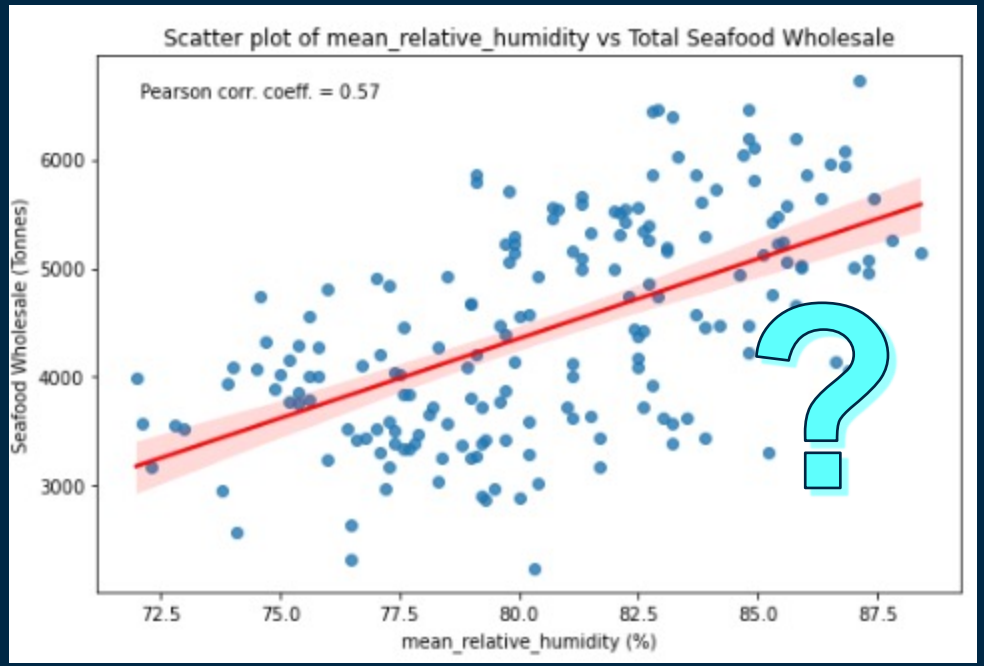
- Higher relative humidity -> More rainfall
- Higher sunshine hours and air temperature -> Less rainfall
- More Rainy days -> More rainfall

Analysis Trends of Relative Humidity & other Rainfall related parameters



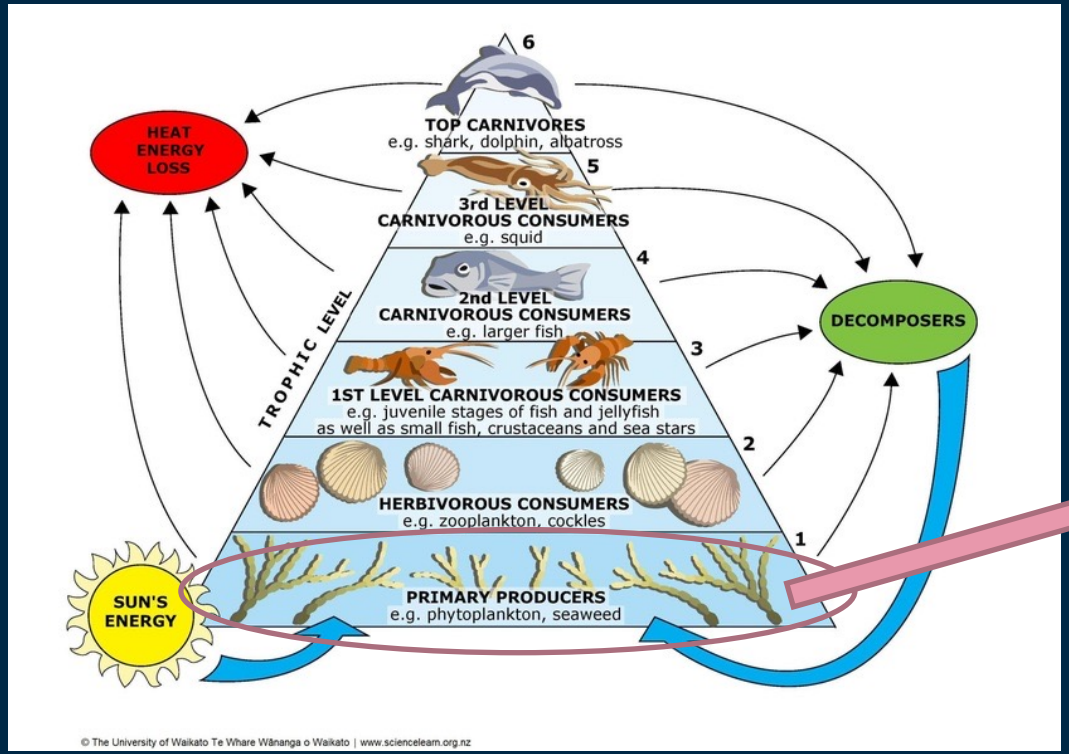
- Higher relative humidity -> More rainfall, more rainy days
- Higher relative humidity -> Lesser sunshine
- Higher relative humidity -> Lower air temperature

Analysis Trends of Relative Humidity & Total Seafood Wholesale



- Higher relative humidity -> More Seafood catches from the ocean

The Marine Food Chain



Tiny microorganisms in the oceans that are generate their own energy using CO_2 and sunlight

Conclusion

- Rainfall in Singapore is commonly influenced by common weather metrics such as air temperature, relative humidity, sunshine hours.
- Relative humidity is suggested to be the key variable influencing rainfall patterns
- Seafood supply and wholesale trade in Singapore is dependent on the relative humidity
- Disruptions to plankton population in the ocean can threaten the marine ecosystem.

Recommendations

First level	Second level	Final level
• *Quantify the relationship of other weather related variables* • *E.g. Atmospheric Pressure, Wind Speed, Cloud Cover*	• *Incorporate Pollutant/Environmental Metrics* • *E.g. CO2, Methane emissions*	• *Quantify relationship between sales of seafood sub-types* • *Relationship between seafood prices with weather variables*
Weather	*Environment*	*Economic*

Thank You

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