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

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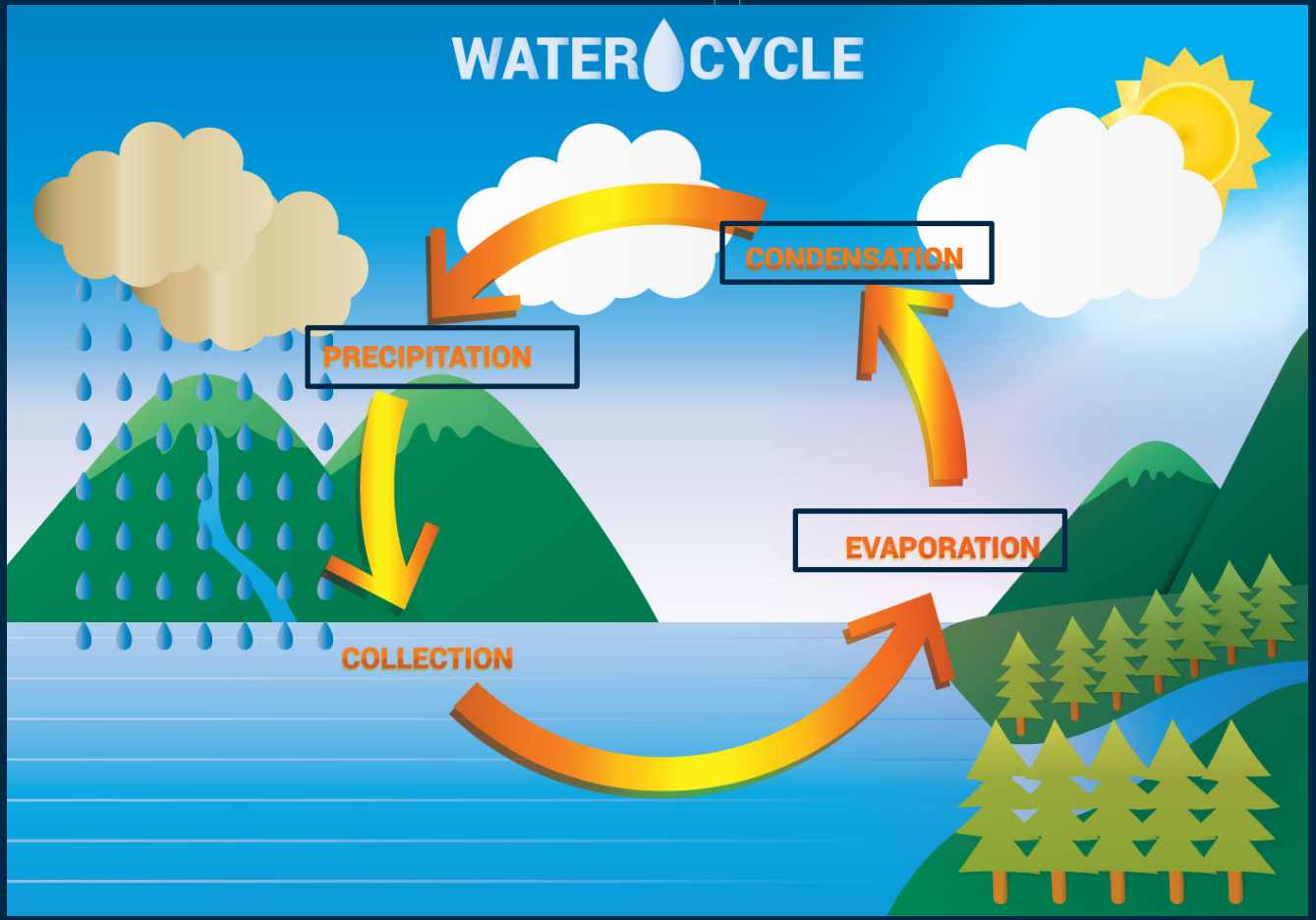

WATER CYCLE
CONDENSATION
PRECIPITATION
EVAPORATION
COLLECTION

Background

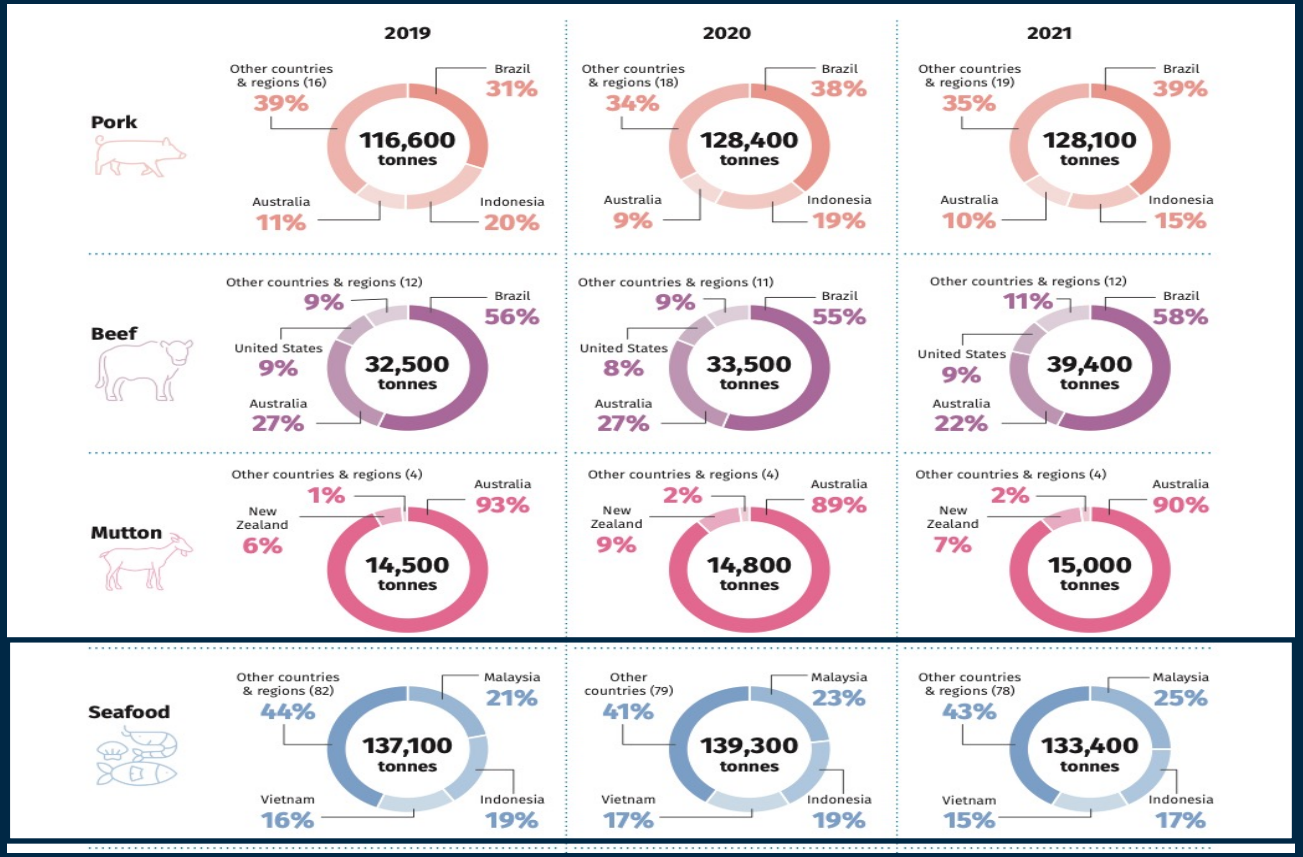
- Singapore is a tropical climate with abundant rainfall year round
- Proximity to the equator gives features such as high temperature, high humidity
- 2 Monsoon seasons: Northeast Monsoon, Southwest Monsoon
- Data Analyst employed by Singapore Food Agency

Problem Statement

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

Research Findings

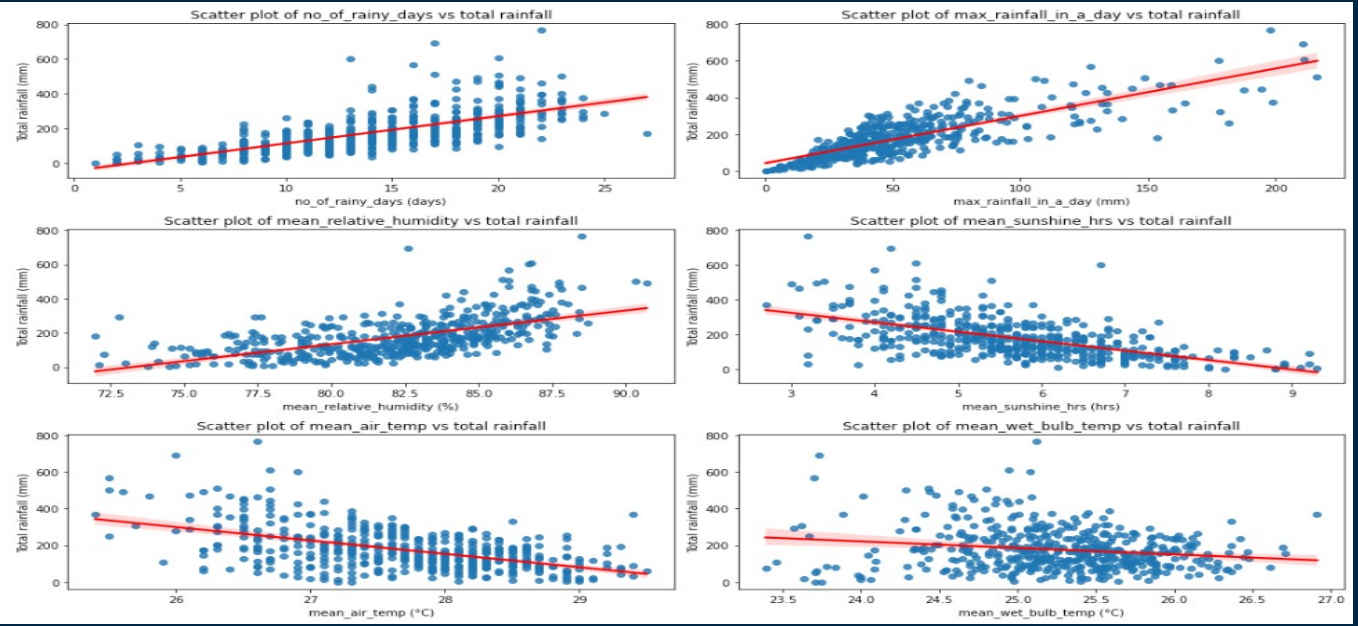
More than 90% of Singapore's food reserves are imported.



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

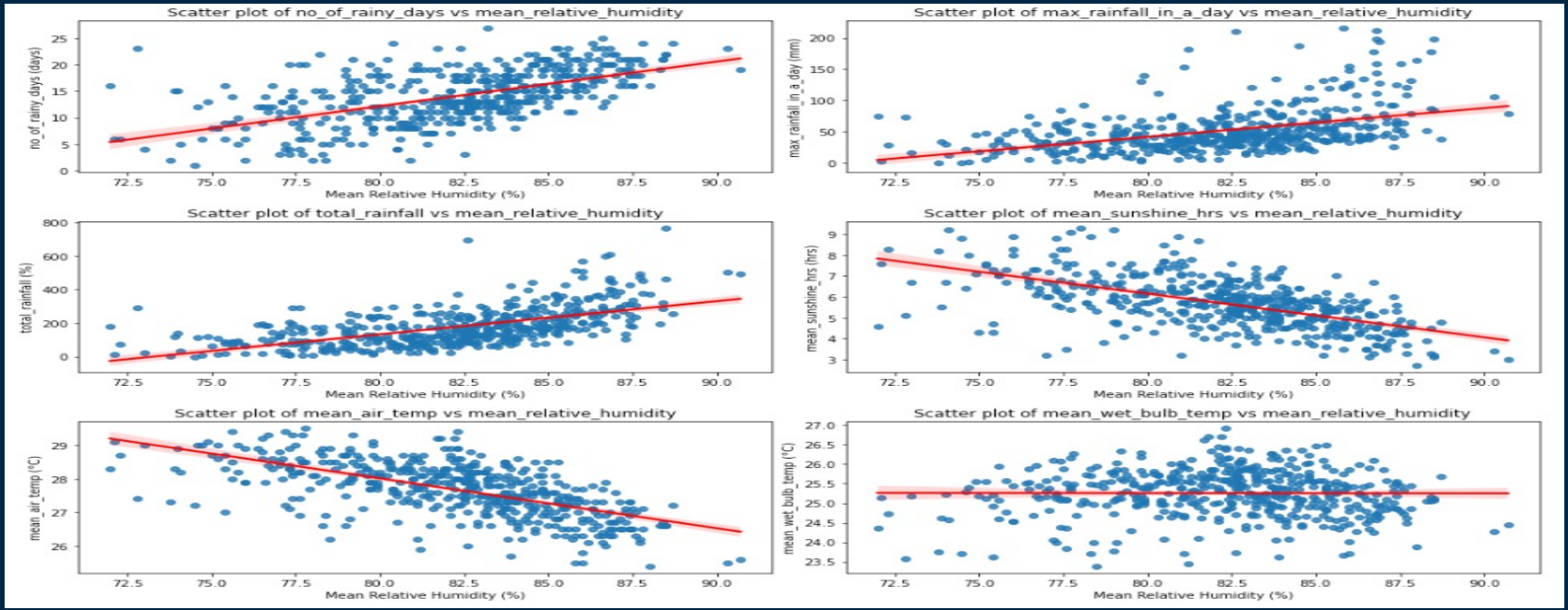
Technical Analysis

Analysis Trends of Total Rainfall & other Rainfall related parameters



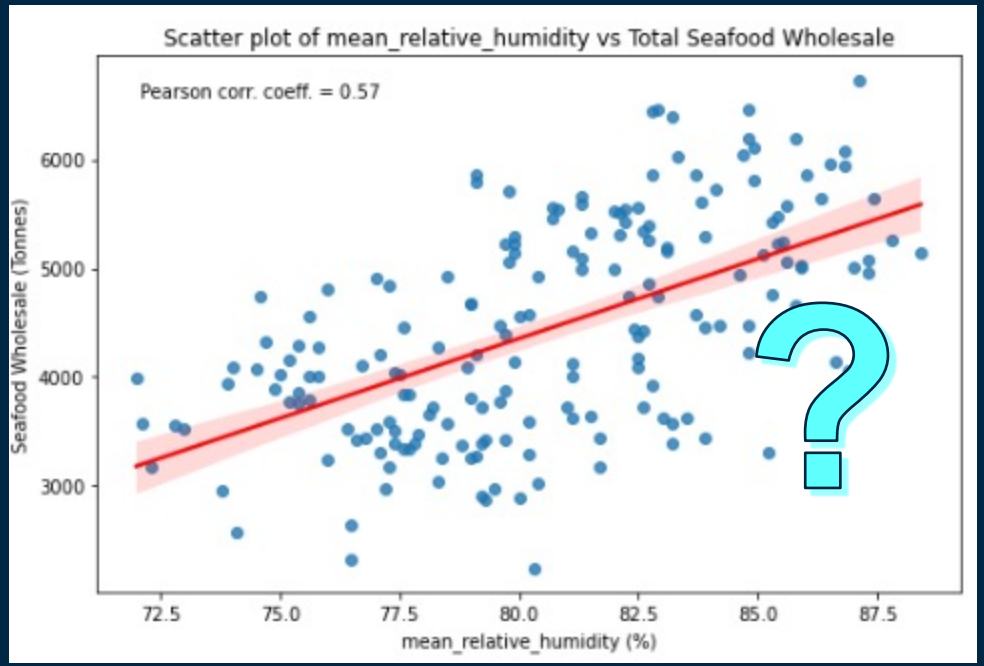
- Higher relative humidity -> More rainfall
- Higher sunshine hours and air temperature -> Less rainfall
- More Rainy days -> More rainfall

Analysis Trends of Relative Humidity & other Rainfall related parameters



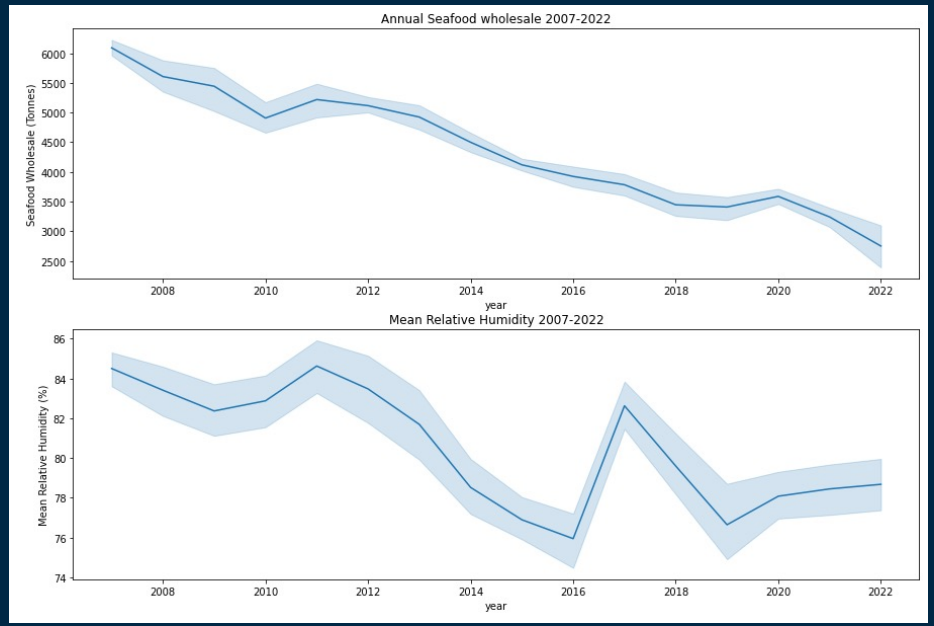
- Higher relative humidity -> More rainfall, more rainy days
- Higher relative humidity -> Lesser sunshine
- Higher relative humidity -> Lower air temperature

Analysis Trends of Relative Humidity & Total Seafood Wholesale



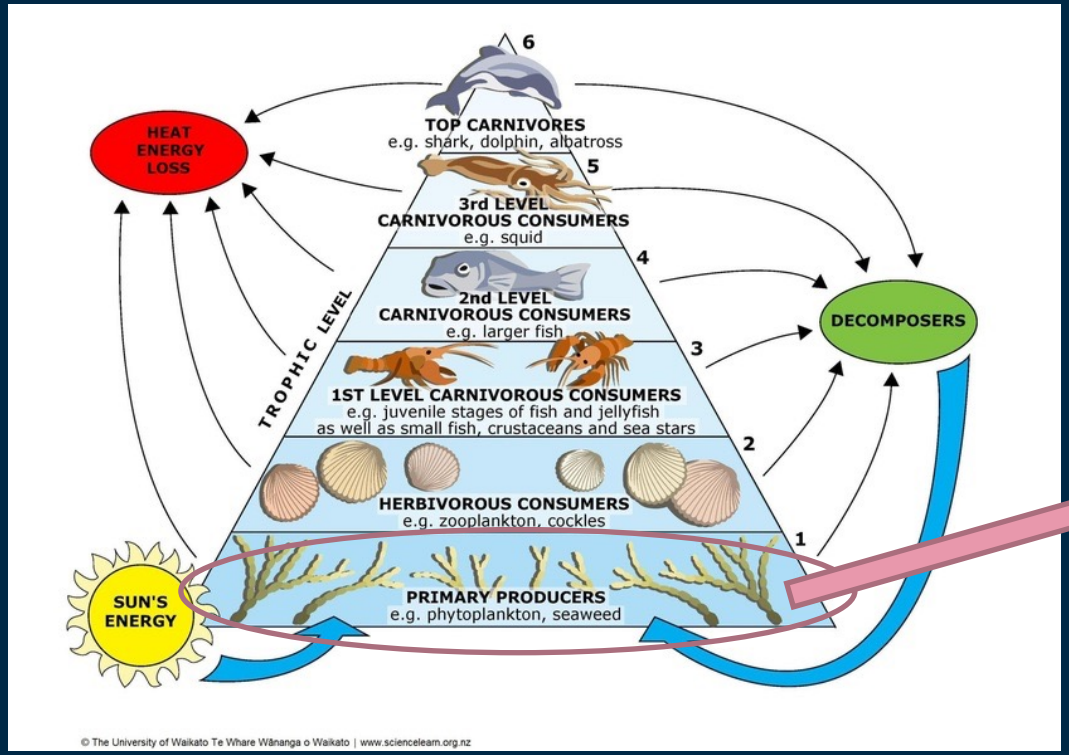
- Higher relative humidity -> More Seafood catches from the ocean

Analysis Trends of Relative Humidity & Total Seafood Wholesale



- Decrease in annual mean relative humidity coincides with the reduction in annual mean seafood wholesale trade across fishery ports

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

Sources

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