# Group Task 3: Hurricane Risk Assessment for Gulf of Mexico Cities

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**Abstract**

Task 3 centers on hurricane risk for 25 cities in the Gulf of Mexico, using data from the Atlantic hurricane database (HURDAT2) from 1851 to 2023, provided by the National Hurricane Center. To analyze and assess this risk, we will perform 3 analyses in R to assess the hurricane risk on the Gulf of Mexico. First, we visualize and note our findings on the storm tracks over the last 25 years (1999-2024), focusing on storm paths, intensity, and duration at each location. Spatial correlation analysis will be used to explore the relationship between hurricane occurrences and contributing environmental factors, while Non-Parametric Density Estimation will estimate location-specific risk based on historical hurricane trajectories. These analyses collectively aim to identify the cities at highest risk of hurricane impact and gauge potential severity.

# 1.0 Introduction

The objective of this Task is to analyze and assess the hurricane risk of 25 cities in the Gulf of Mexico.

# 2.0 Background

[Your background text here]

# 3.0 Methodology

[Your methodology text here]

# 4.0 Results

[Your results text here]

# 5.0 Discussion

[Your discussion text here]

# 6.0 Conclusion

[Your conclusion text here]