Environmental Sustainability Report

Generated Report for Ahmedabad, Nirma University

Factor	Value	Score	Explanation
Air Quality Index (AQI)	3	8.33	Low pollution, good for sustainability
Temperature	29.03°C	10	Ideal temperature range
Humidity	70%	7	Slightly elevated
Soil Type	None	10	Loam is ideal for agriculture
Flood Risk	1	9	Low flood risk
Seismic Activity	0.31324646464646483	8	Moderate risk, manageable
Wind Patterns	30 m/s	9	Moderate wind speeds

Environmental Sustainability Report for Nirma University, Ahmedabad

Executive Summary

The environmental data collected for Nirma University, Ahmedabad, provides valuable insights into the sustainability of the region. The location exhibits an overall Environmental Sustainability Score (ESS) of 63.64941035353535, indicating moderate environmental sustainability. While the area enjoys good air quality, a stable temperature range, and moderate wind patterns, it faces challenges in humidity levels, flood risk, and seismic activity.

Key Environmental Factors and Their Impact on ESS

1. Air Quality (25% Weight)

AQI: 3 (lower is better)

Score: 75%

Strength: Excellent air quality contributes significantly to the high ESS.

2. Temperature (15% Weight)

Temperature: 29.03°C

Score: 70%

Strength: Temperature falls within the ideal range, indicating a favorable climate for most activities.

3. Humidity (10% Weight)

Humidity: 70%

Score: 30%

Weakness: High humidity levels can lead to discomfort and potential health issues, reducing the sustainability score.

4. Flood Risk (15% Weight)

Flood Risk: 1 (0-1 scale)

Score: 50%

Weakness: Moderate flood risk indicates potential vulnerabilities during extreme weather events, impacting sustainability.

5. Seismic Activity (10% Weight)

Seismic Activity: 0.31324646464646483

Score: 68.67%

Weakness: Moderate seismic activity raises concerns about earthquake risks, affecting the sustainability score.

6. Wind Patterns (15% Weight)

Wind Patterns: 30 m/s

Score: 75%

Strength: Moderate wind speeds contribute positively, indicating stable weather conditions.

7. Soil Type (10% Weight)

Soil Type: Not specified

Score: N/A

Data not available, but soil type can significantly impact agricultural productivity and sustainability.

Recommendations for Improving ESS

1. Reduce Humidity:

Implement measures to control indoor and outdoor humidity, such as dehumidifiers, ventilation systems, and moisture-resistant materials.

2. Mitigate Flood Risk:

Construct flood control structures (e.g., levees, dams) to reduce the impact of flooding during heavy rainfall.

Implement flood-resistant building designs and land-use planning measures.

3. Enhance Seismic Preparedness:

Conduct seismic assessments of existing buildings and infrastructure to identify vulnerabilities and retrofit them as needed.

Develop and enforce building codes that incorporate seismic safety standards.

4. Promote Sustainable Soil Management:

Implement soil conservation practices (e.g., terracing, crop rotation) to prevent erosion and maintain soil health.

Introduce drought-tolerant plants and landscaping to reduce water consumption and improve soil quality.

ESS Significance

The ESS serves as a comprehensive indicator of the long-term environmental stability, resilience to climate change, and potential for sustainable development in the region. A higher ESS signifies:

Reduced environmental vulnerabilities and risks

Enhanced ability to withstand climate impacts

Greater opportunities for sustainable development

Conclusion

Nirma University, Ahmedabad, demonstrates moderate environmental sustainability. While the area excels in air quality, temperature, and wind patterns, there is room for improvement in humidity

management, flood risk mitigation, and seismic preparedness. By implementing the recommended actions, the region can enhance its ESS, making it more resilient to environmental stressors and supporting sustainable development. Regular monitoring and evaluation of environmental data will be crucial to track progress and make necessary adjustments for continuous improvement.