

# Environmental Sustainability Report

Generated Report for Ahmedabad, Nirma University

Factor	Value	Score	Explanation
Air Quality Index (AQI)	2	8.33	Low pollution, good for sustainability
Temperature	27.99°C	10	Ideal temperature range
Humidity	74%	7	Slightly elevated
Soil Type	Clay	10	Loam is ideal for agriculture
Flood Risk	1	9	Low flood risk
Seismic Activity	0.30513434343434337	37	Moderate risk, manageable
Wind Patterns	350 m/s	9	Moderate wind speeds

## Environmental Sustainability Report

Location: AhemedaBad, Nirma University

Environmental Sustainability Score (ESS): 63.57553156565656

### Key Environmental Factors:

- Air Quality: Excellent (AQI: 2)
- Temperature: Ideal (27.99°C)
- Humidity: Above ideal (74%)
- Soil Type: Favorable (Clay)
- Flood Risk: Low (1)
- Seismic Activity: Moderate (0.30513434343434337)
- Wind Patterns: Moderate (350 m/s)

## Strengths:

Excellent air quality

Ideal temperature range

Low flood risk

Moderate wind patterns

## Weaknesses:

Above ideal humidity

Moderate seismic activity

## Assessment of ESS Components:

**Air Quality (25% weight):** The low AQI indicates exceptional air quality, contributing significantly to the high ESS. Maintaining this air quality level is essential for the area's long-term sustainability.

**Temperature (15% weight):** The moderate temperature falls within the ideal range, indicating minimal thermal stress on the environment.

**Humidity (10% weight):** The elevated humidity level slightly reduces the ESS. Reducing humidity levels through measures such as vegetation and water retention can improve sustainability.

**Flood Risk (15% weight):** The low flood risk enhances the ESS, suggesting resilience to climate-related water hazards.

**Seismic Activity (10% weight):** The moderate seismic activity poses a potential risk. Implementing earthquake-resistant building codes and promoting disaster preparedness can mitigate this risk.

**Wind Patterns (15% weight):** The moderate wind speeds contribute positively to the ESS, indicating stable weather conditions.

Soil Type (10% weight): The clay soil supports agricultural productivity, enhancing the sustainability of the area.

#### Recommendations for Improvement:

Manage Humidity: Promote the use of vegetation and water retention techniques to reduce humidity levels closer to the ideal range.

Mitigate Seismic Activity: Implement strict earthquake-resistant building codes, conduct earthquake drills, and raise public awareness to prepare for seismic events.

Enhance Air Quality: Monitor air pollution sources and implement emission control measures to maintain excellent air quality.

#### Long-Term Environmental Stability and Sustainable Development:

A high ESS indicates an area's resilience against environmental stressors and potential for sustainable development. In this case, the ESS of 63.57553156565656 suggests:

Environmental Stability: The low flood risk, moderate seismic activity, and wind patterns provide a stable environmental backdrop.

Resilience to Climate Change: The ideal temperature range and low flood risk indicate the area's ability to withstand climate change impacts.

Sustainable Development: The favorable environmental conditions support sustainable development practices.

Maintaining and improving the ESS through the recommended actions will further enhance the area's environmental sustainability, ensuring long-term resilience, and creating a vibrant and sustainable community for future generations.