


Sustainability Assessment Report

This report summarizes the sustainability potential of a given location based on assessments of solar, wind, and water resources.

I. Solar Energy Potential

Resource	Value	Result	Recommendation
Solar Irradiance	5.13 kWh/m ²	 Excellent potential!	Installing solar is a great investment.

II. Wind Energy Potential

Resource	Status	Average Wind Speed	Recommendation
Wind Feasibility	Not Feasible	2.54 m/s	Wind energy is not recommended due to low average wind speeds. Explore alternative energy sources.

III. Water Resource Management Potential

Resource	Score	Assessment
Rainfall	1.0	Excellent rainfall potential.
Soil Infiltration	0.06	Low soil infiltration indicates potential runoff issues. Soil improvement measures are recommended.
Slope	0.089	Gentle slope, potentially favorable for water harvesting but detailed topographic analysis is recommended.
Water Harvesting Potential	0.536	Moderate water harvesting potential. Further investigation and system design are required to optimize collection.

IV. Overall Sustainability Summary

This location demonstrates excellent potential for solar energy generation. However, wind energy is not viable due to low wind speeds. Water resource management presents a mixed picture. While rainfall is plentiful, low soil infiltration suggests a need for interventions to maximize water retention and minimize runoff. Moderate water harvesting potential exists but requires further analysis to determine optimal strategies.

V. Recommendations

- **Prioritize solar energy implementation.** The high solar irradiance makes it a highly attractive renewable energy option.
- **Investigate soil improvement techniques** to enhance water infiltration and reduce runoff. This could involve methods like adding organic matter, no-till farming, or contour plowing.
- **Conduct a detailed topographic analysis** to optimize water harvesting system design and maximize collection efficiency.

- **Explore alternative renewable energy sources** beyond wind and solar, such as geothermal or biomass, if applicable.

VI. Next Steps

- Conduct a detailed feasibility study for solar PV system installation, including system sizing and economic analysis.
- Perform soil testing and analysis to determine appropriate soil improvement strategies.
- Develop a comprehensive water management plan that incorporates rainwater harvesting, runoff management, and soil conservation measures.

This report provides a preliminary assessment of the sustainability potential. Further investigation and detailed analysis are recommended to refine the findings and develop a comprehensive sustainability plan.