Satellitor Land Analysis Report

Location: Latitude 28.302400664854925, Longitude 30.69693559205669

Introduction

Overview:

This report, generated by Satellitor's advanced agricultural analysis system, provides a comprehensive overview of a specific plot of land located at latitude 28.302400664854925 and longitude 30.69693559205669. The data used in this analysis was collected through remote sensing technologies and offers valuable insights into the land's agricultural potential.

Key Findings:

- The temperature of the land is moderate, averaging around 22.41°C, providing a conducive environment for crop growth.

Potential:

The moderate temperature, loamy soil, and adequate nutrient content present excellent agricultural potential for this land. The need for irrigation due to low rainfall can be managed with proper water management systems. This land could be suitable for a variety of crops, particularly those that thrive in warmer climates and require high nutrient levels.

Soil Analysis

Characteristic	Value
Soil Type	Loamy
Nitrogen (N)	48.5 ppm
Phosphorus (P)	15.5 ppm
Potassium (K)	44 ppm
Moisture	8.318764716386795%

Soil Type Description:

The soil type is Loamy, which generally contains a balanced mixture of sand, silt, and clay. This type of soil is known for its excellent water retention capability, providing good drainage and aeration.

Nutrients Overview:

The soil has a sufficient level of nutrients, with Nitrogen at 48.5, Phosphorus at 15.5, and Potassium at 44. These values indicate a healthy soil composition, promoting robust plant growth and development.

Moisture Analysis:

The current soil moisture level is at 8.32%, which is relatively low. Considering the 4mm rainfall and 41.9% humidity, irrigation might be necessary to maintain optimal moisture levels.

Fertilizer Recommendation:

Given the nutrient levels, a regular maintenance fertilization schedule should suffice. A balanced fertilizer with a N-P-K ratio close to 10-10-10 can be used to ensure all three nutrients are replenished.

Considerations:

Monitor the moisture levels closely, especially during dry spells, to ensure plants have adequate water for growth. Also, consider implementing crop rotation strategies and cover crops to maintain soil health and prevent nutrient leaching.

Environmental Conditions

Factor	Value	Analysis
Temperature	22.41°C	The average temperature is 22.41°C, which is ideal for growing a wide variety of crops. However, it might be too warm for some temperature-sensitive plants.
Rainfall	4 mm	The area receives an average rainfall of 4 mm. This low rainfall indicates that irrigation will be necessary for agriculture.
Humidity	41.9%	The humidity level is at 41.9%, which is suitable for most crops. However, some crops may require higher humidity levels.

Challenges:

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• Low rainfall may pose a challenge for crop growth, requiring adequate irrigation facilities.

Advantages:

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• The loamy soil type is ideal for agriculture as it retains nutrients well and has good water drainage.

Crop Analysis

Crop 1: Wheat

Attribute	Details
Scientific Name	Triticum aestivum
Category	Cereal
Temperature	10-25°C
Rainfall	600-800 mm
pH Range	6.0-8.0
Suitability	Suitable, temperature and rainfall are within optimal range, pH is slightly alkaline but still acceptable.
Notes	Nitrogen levels are good for wheat growth.

Crop 2: Barley

Attribute	Details
Scientific Name	Hordeum vulgare
Category	Cereal
Temperature	10-20°C
Rainfall	500-700 mm
pH Range	6.0-7.5
Suitability	Suitable, temperature and rainfall are within optimal range, pH is slightly alkaline but still acceptable.
Notes	Phosphorus levels are slightly low for barley growth.

Crop 3: Corn

Attribute	Details
Scientific Name	Zea mays
Category	Cereal
Temperature	18-27°C
Rainfall	500-1000 mm
pH Range	5.8-7.0
Suitability	Borderline, temperature is at the upper limit of the optimal range and rainfall is slightly low.
Notes	Potassium levels are good for corn growth.

Crop 4: Soybean

Attribute	Details
Scientific Name	Glycine max
Category	Legume
Temperature	20-30°C
Rainfall	500-1000 mm
pH Range	6.0-7.0
Suitability	Unsuitable, temperature is above the optimal range.
Notes	Nitrogen levels are good for soybean growth.

Crop 5: Potato

Attribute	Details
Scientific Name	Solanum tuberosum
Category	Tuber
Temperature	10-20°C
Rainfall	600-1000 mm
pH Range	4.5-5.5
Suitability	Unsuitable, soil pH is above the optimal range.
Notes	Potassium levels are good for potato growth.

Summary:

Based on the given data, wheat and barley are the most suitable crops for this location. Corn is borderline suitable, while soybean and potato are not suitable due to temperature and pH constraints, respectively. It is recommended to monitor soil moisture levels and adjust irrigation accordingly.

Recommendations

Ideal Crop Selection

Based on the loamy soil type, optimal crops would be vegetables like tomatoes, cucumbers, and peppers, or grains such as wheat, oats, and barley. These crops typically perform well in soil with a balanced composition of sand, silt, and clay like yours.

Temperature Management

With a temperature of 22.41°C, consider planting warm-season crops. Monitor temperature fluctuations, as some variations may affect crop growth. Prepare for seasonal changes and protect crops if temperatures drop.

Irrigation Management

The 4mm rainfall and 8.32% moisture level suggest that irrigation will be necessary. Implement a drip irrigation system to maintain optimal soil moisture and conserve water.

Soil Fertility Management

Soil has adequate nitrogen (48.5), but phosphorus (15.5) and potassium (44) levels are relatively low. Apply balanced fertilizers to improve phosphorus and potassium content, ensuring healthy crop growth.

Soil Testing and Crop Rotation

Schedule regular soil testing to monitor nutrient levels. Implement crop rotation practices to maintain soil fertility, reduce pests and diseases, and improve overall crop yield.

Conclusion

The land in question has a loamy soil type with adequate nitrogen, phosphorus, and potassium levels, supporting potential crop growth. The temperature, rainfall, and humidity data indicate a favorable environment for various crops. However, the moisture level is relatively low, which may necessitate irrigation.

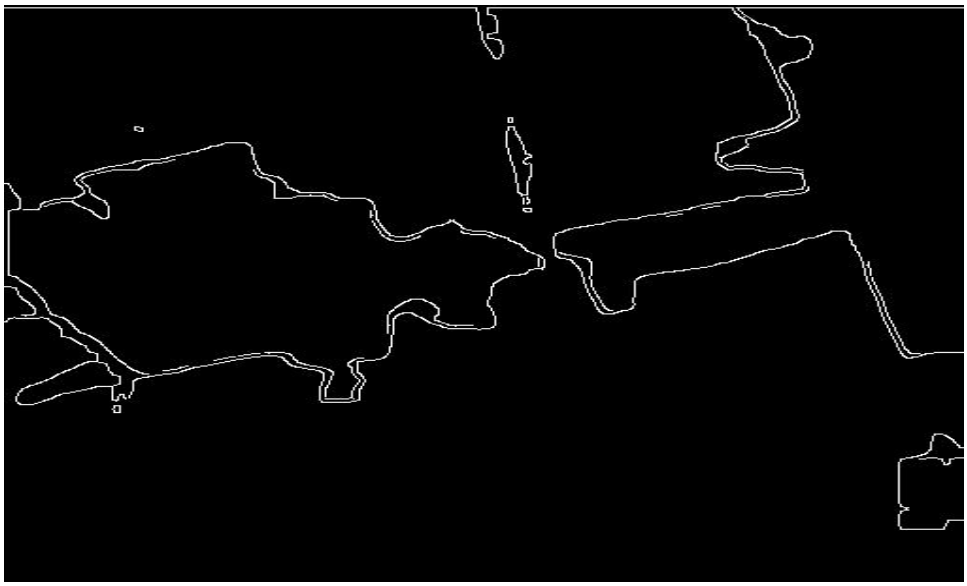
Future Potential:

With proper land use planning and agricultural practices, this land can be utilized for crop production, contributing to local food security and income generation.

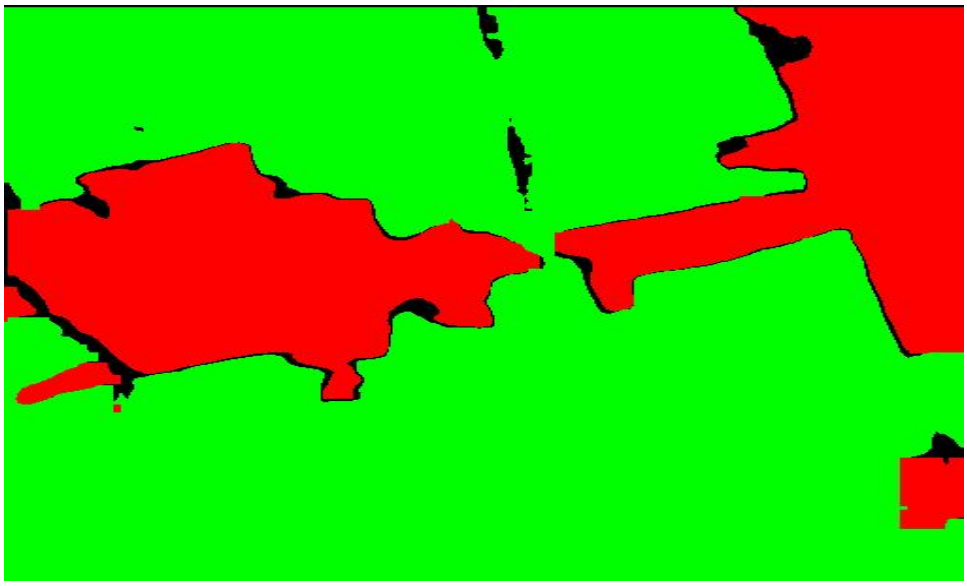
By capitalizing on the favorable soil and climate conditions, while addressing the moisture requirement, the land can be transformed into a productive agricultural asset.

Land Visualization

Satellite Image



Land Boundaries



Land Classification