Investigating Rainfall in Sunny Malta
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ST. CLARE COLLEGE

The GLOBE Program

Abstract

Malta is known for its sunny weather, but this means that it can struggle with water shortages, especially during dry periods. This lack of rainfall can affect agriculture, water resources, and the environment, making it important to understand rainfall patterns to manage these challenges effectively. Through this project we wanted to study the frequency, intensity, and variability of rainfall throughout the month of January which is supposed to be a month of rain. Unfortunately, January 2024 turned out to be an almost rainless month. This poses several problems for Malta.

Research Questions

- How is rainfall changing over time in Malta?
- Are there any connections between rainfall patterns and human activities?
- How do urbanization and land-use changes in Malta influence local rainfall patterns?

Introduction

Investigating rainfall in Malta at San Gwann Primary School required employing collecting data on precipitation patterns in the region. San Gwann Primary School is located in the central part of Malta. Our school is situated on a very busy road in the heart of San Gwann. However, the rain gauge is set up in an open yard at the back of the school, as seen in Figure 1.

Figure 1 Aerial view of our school. Red circle marks the location of the rain gauge.

Research Methods

To collect data on rainfall, GLOBE protocols were utilized, which include standardized methods for measuring rainfall using a rain gauge (Figure 2). The students visited the study site on a daily basis to collect rainfall data from the previous day. The data was noted using the GLOBE Rainfall Data Sheet (Figure 3). All data collected was then logged onto the GLOBE website.
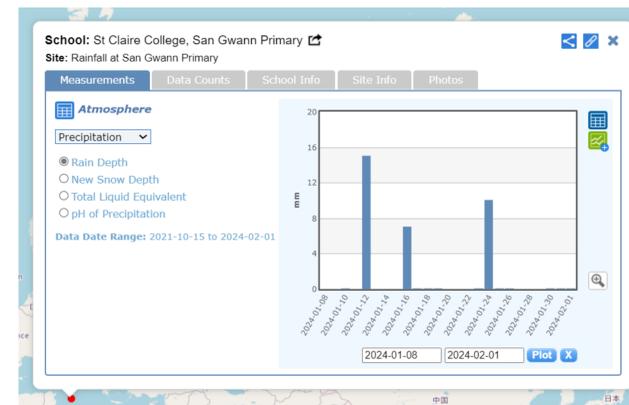

Figure 2 Rain gauge placed in an open space.
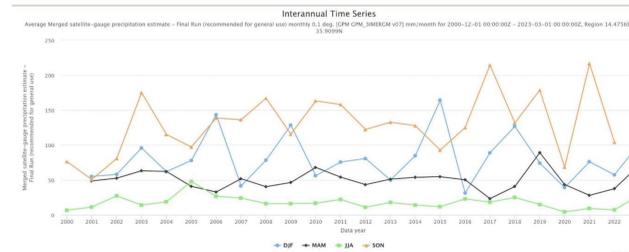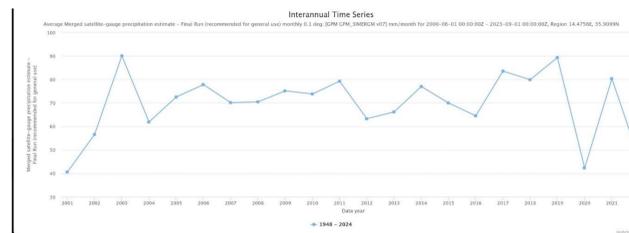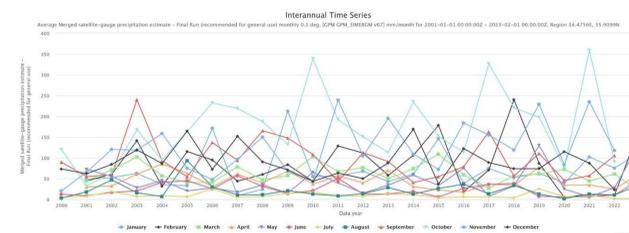

Figure 3 Rainfall datasheet

Results

Rainfall Plot of VIZ GLOBE

Rainfall History Graphs

Conclusion

The fact that rainfall was only recorded on 3 days in January clearly shows the significance of understanding and monitoring precipitation patterns. Such information is crucial for various sectors, including agriculture, water resource management, and urban planning, as it helps anticipate and adapt to changing weather conditions and water availability. Furthermore, the low rainfall frequency observed in January highlights the vulnerability of the region to water scarcity and underscores the importance of implementing sustainable water management practices, such as rainwater harvesting and greywater recycling, to enhance resilience to droughts and mitigate the impacts of climate change.

For this reason, our school has been working on adopting several water saving methods like collecting rainwater by installing a rain harvester that captures rainwater for outdoor irrigation; regularly checking faucets, pipes, and toilets for leaks and repairing them promptly to prevent water wastage; and educating and raising awareness to the community by promoting water conservation practices through educational campaigns and outreach efforts to encourage students and their families to reduce water waste.

By implementing these water-saving methods, individuals, households, and communities can contribute to sustainable water management and ensure the availability of water resources for future generations.