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BSc in Applied Data Science Communication. Citizen Science Group Assignment

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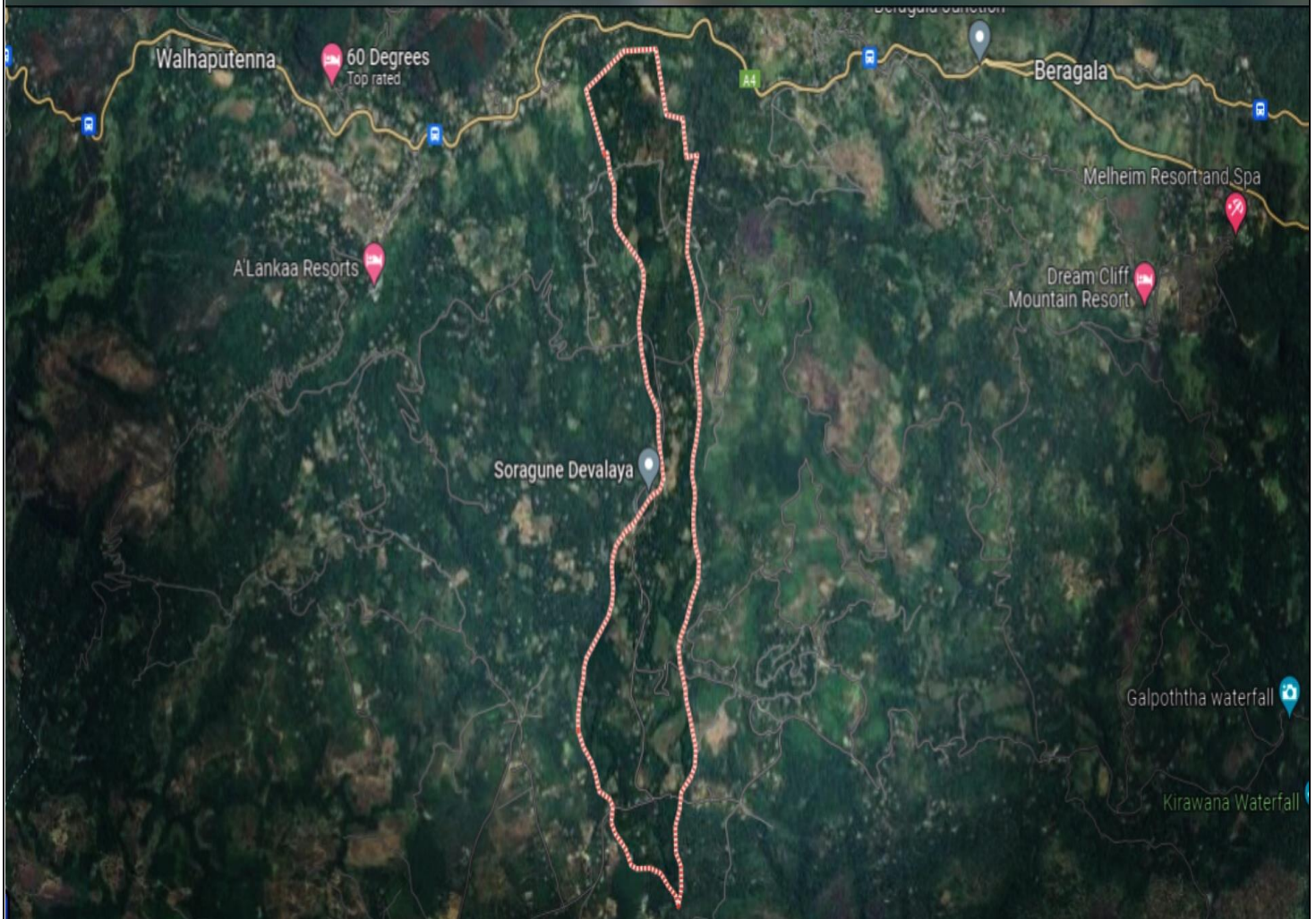
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Exploring Climate Impact Field Study



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Overview

Location:

The village of Soragune is in the Badulla District, Haldummulla Divisional Secretariat, Uva Province, Sri Lanka. It is listed as being close to the villages of Weliya and Amilagama.



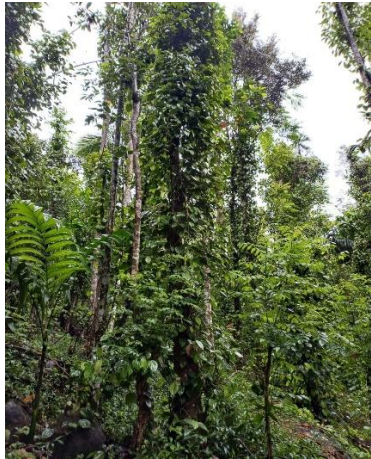
Land Situation:

The Soragune region is made up of about 800 acres, of which 628 acres are in the Soragune forest. These were previously held by the Soragune Shrine ("Kuda Katharagama Devala"), but they have since been acquired. This suggests that the land has undergone a significant change in usage.



Agriculture:

With more than 90% of the inhabitants employed in agriculture either directly or indirectly, the downstream region is characterized as agricultural. Among the many crops grown by the local farmers are cinnamon, black pepper, and rice.



Biodiversity and nature:

The region is recognized for having a high biodiversity. The village displays seasonal flowering plants, common wildlife, modern agriculture, minimal deforestation, fluctuating wetland water levels, and human impact on certain plants. Biodiversity is moderate, with notable concentrations in forests, wetlands, and agriculture.

Soragune in Haldummulla, with its verdant surroundings and peaceful ambiance, epitomizes quiet beauty. Beautiful hills, tea plantations, and a well-balanced fusion of agriculture and environment characterize the region.



Introduction

Beginning on December 3, the field visit to Soragune, a community in Haldummulla, we aimed to investigate the complex intersections between the villagers' responses to climate dynamics and their own. Our project's efforts were concentrated on determining the intricate problems that the villagers faced, with an emphasis on how climate change affected their way of life.

We had fascinating conversations with people who make a livelihood from farming, business, and other sources throughout our visit. These discussions provided us with a wealth of real-world knowledge, enabling us to comprehend the challenges and triumphs that accompany real life.

The speech revealed the villagers' resolute commitment and drive while exposing the complex nature of their climate-related challenges. Important topics surfaced, highlighting the severe effects of erratic weather patterns on agricultural output and the corresponding limitations brought about by a lack of advanced farming techniques.

In conclusion, the main goal of our stay in Soragune was learning how the locals handle the effects of climate change. We had several fascinating conversations with folks in a variety of professions, including farming. These discussions provided us with a wealth of practical knowledge, enabling us to understand the challenges the community faced. Even in the face of the difficulties posed by climate change, we observed the peasants' genuine commitment. As we begin our investigation, our report will meticulously document and examine the ways in which Soragune's agricultural is impacted by climate change. We wish to disseminate pertinent information and offer recommendations for how the hardy people of Soragune may farm sustainably and adjust to changing climatic conditions.



Objectives

- **Assessing Climate-Related Challenges:**

To conduct a thorough investigation and analysis of the unique climate-related issues that the people of Soragune village in Haldummulla are facing, with an emphasis on how these issues affect the region's livelihoods and crops.

- **Understanding Villagers' Perspectives on Climate Dynamics:**

To conduct a thorough investigation and analysis of the unique climate-related issues that the people of Soragune village in Haldummulla are facing, with an emphasis on how these issues affect the region's livelihoods and crops.

- **Documentation of Real-world Knowledge on Climate Effects:**

we want to create a comprehensive database of practical information that will serve as a guide for understanding the complex realities, difficulties, and triumphs that the people of Soragune have faced in relation to the local consequences of climate change.

- **Highlighting Climate-Induced Implications on Agriculture:**

Through these discussions, we want to create a comprehensive database of practical information that will serve as a guide for understanding the complex realities, difficulties, and triumphs that the people of Soragune have faced in relation to the local consequences of climate change.

- **Fostering Climate Resilience Strategies:**

To suggest interventions and methods backed by science that will improve Soragune Village's climate resilience while also meeting the community's expressed needs and goals. Special attention will be paid to tackling the unique climatic issues that the village faces.

- **Contribution to Knowledge and Solutions for Climate Challenges:**

Presenting this report as a useful tool for academics, decision-makers, and practitioners interested in developing practical solutions to address the climate-related problems unique to Soragune and surrounding areas will help it make a significant contribution to the larger understanding of the challenges associated with climate change in agrarian communities.

Methodology

Field Visit, Questionnaire Survey, and Advanced Data Analysis

- **Field Visit:**

Objective: Our study's main goal was to obtain firsthand knowledge of the circumstances and difficulties the Soraguna community faces in the area. To grasp the subtleties of climate-related concerns, a thorough field tour was carried out, encompassing house-by-house inspections and in-depth interviews with people.

Approach: Through in-person interactions with neighbourhood residents and on-site observations of environmental elements and infrastructure, our research team fostered a thorough knowledge.

Duration: One day was all that was needed for the field visit, which allowed for thorough investigation and meticulous data gathering.

- **Questionnaire Survey:**

Objective: To methodically evaluate how the community views the effects of climate change, as well as its experiences and obstacles.

Questionnaire Design: Key subjects were covered in a well-designed, organized questionnaire. To provide a tailored approach, the survey was given through in-person interviews conducted during house visits.

Sampling Strategy: To represent the range of viewpoints within the community, a representative sample of Soraguna residents was chosen.

Data Collection: Each home was visited to collect data, and each response was carefully documented. After that, the collected data was imported into an Excel document for additional examination.

- **Data Analysis:**

Quantitative Analysis: Advanced quantitative analysis was performed on the collected data utilizing statistical techniques, such as correlation and descriptive statistics. Quantitative trends and patterns were presented by this.

Qualitative Analysis: Essential narratives and contextual information were extracted from qualitative insights gathered through theme analysis of house visits.

Advanced Data Analysis Tools: In order to provide dynamic and perceptive visuals that enable a more nuanced view of the complicated data, the data was loaded into PowerBI, a sophisticated data analysis tool.

- Ethical Considerations:

Informed Consent: Informed permission was obtained by giving participants comprehensive information about the goal of the study, confidentiality procedures, and their ability to withdraw.

Privacy Protection: To protect participant privacy and guarantee responsible management of sensitive data, strict confidentiality protocols were put in place.

Community Collaboration: The community was actively involved in ensuring that the study's findings matched its goals and requirements.

- Limitations:

The study's generalizability may be impacted by restrictions, despite the efforts taken to guarantee a representative sample, such as time limits and weather.

- Recommendations:

Recommendations to improve the Soraguna community's well-being and strengthen climate resilience will be based on the methodology's findings, which have been further refined by sophisticated data analysis.

Questionnaire

1. Rainfall Impact:

- Is the rainfall causing minor, moderate, severe, or no impact in your area?

Rainfall had a range of effects on Soraguna village, with severe instances being the most frequent. The town fared well throughout minor calamities, but struggled with intermediate and major ones. Identifying these patterns can help assess how adaptable and prepared the community is to deal with varying levels of rainfall influence.

2. Road Conditions:

- Are the road conditions currently slippery, causing difficulty commuting, hazardous, or no issue?

The state of the roads in Soraguna village varied, but two main problems stood out: slippery roads and difficult commutes. It is likely that folks commuted more conveniently and safely when there were no issues to report. Understanding these road conditions is critical to assessing transportation concerns and ensuring the convenience and security of the village's residents.

3. Water Quality:

- How would you describe the water quality in your area: good, poor, or average?

The Soraguna village's water quality was found to be inconsistent, with reports of good quality mixed in with those of bad and average quality. Water quality issues must be monitored and resolved to protect the community's health and welfare, and policies that maintain and improve water quality must be put in place to guarantee that all residents have access to safe and clean water.

4. Water Scarcity:

- Is there currently water scarcity in your location?

Water scarcity in the village of Soraguna fluctuated; positive replies indicated periods of scarcity, while negative responses showed times when the community's needs were met by abundant water. Understanding the patterns of water shortage is essential to developing sustainable water management strategies and ensuring a consistent and reliable water supply for the populace.

5. Water Supply:

- What is the primary source of water supply in your area: tap lines, canal, river, rainwater, well, or other?

Rivers, tap lines, canals, wells, and potentially more sources are some of the sources of Soraguna village's water supply. In view of the variations in water availability and quality, this variety may make the community more robust when it comes to obtaining water. Understanding the variety of water sources is crucial for sustainable water management and

for ensuring a steady supply of water for the populace. To resolve concerns with the community's water supply, the Soragune Temple's monk has taken proactive steps.

6. Experiencing Water Scarcity:

- Are you currently experiencing water scarcity?

The village of Soraguna has seen oscillations in the level of water shortage; positive responses indicated periods when the community had access to adequate water, while negative responses showed periods when water was insufficient. It is critical to understand the complexities of water scarcity to implement effective strategies for managing water resources and to ensure that residents will always have access to clean, dependable water. The expression "no issue" suggests that there were periods during which there were reports of no problems and rather consistent water supplies.

7. Landslides or Floods:

- Have you experienced landslides or floods recently?
- Did the landslides or floods have minimal impact, require attention, or no impact at all?

Floods and landslides have caused both small and major damage to the Soraguna community. The community may not have taken enough proactive steps to lessen these incidences if only minor repercussions have been acknowledged. The large-scale landslide that occurred in the vicinity of Haldummulla in 2014 makes it clear that more comprehensive disaster management protocols are required. To increase resilience and guarantee the community's safety and well-being, it is essential to comprehend the nature and intensity of these effects.

8. Climate-Related Health Issues:

- Are there any climate-related health issues, such as mosquito breeding or diarrhea, in your community?

The information provided does not point to a mosquito breeding issue; rather, the hamlet may have had gastrointestinal issues given the prevalence of cases of diarrhea. When taking climate-related variables into account, understanding the health consequences of climate change is crucial for implementing public health policies, improving sanitation, and addressing community well-being concerns.

9. Infrastructure Damage:

- Has the rainy climate caused minor, moderate, or no infrastructure damage in your area?

Sometimes when the weather was rainy, Soraguna village had some infrastructural damage. The term "minor" suggests that while there was some disruption to the infrastructure, it wasn't substantial enough to result in serious issues. A detailed assessment of the kind and extent of infrastructure damage is necessary for planning and implementing measures to increase the village's infrastructure's resilience to bad weather.

10. Signal Issues:

- Are there currently issues with mobile or internet signals?

At various periods, Soraguna village has signal issues, especially with mobile and internet access. Signal issues can impact residents' communication, connectivity, and access to information. Understanding and fixing these signal issues is critical to the community's having improved communication infrastructure and consistent connectivity.

11. Rainy Season Impact on Crop Production:

- How has the rainy season impacted crop production: positively, negatively, average, or no impact?

In Soraguna village, the wet season had a range of consequences on agricultural output. There were moments when there were no noticeable impacts or just normal circumstances, as well as moments when there were both negative and positive consequences. Understanding these differences is essential for organizing agricultural operations, allocating resources, and implementing policies that increase resistance to adverse weather during the rainy season.

12. Economic Impact on Income:

- What is the economic impact on income: minor, moderate, severe, or no impact?

The Soraguna community saw a range of economic impacts on income, from little to substantial. Understanding these economic cycles is crucial to developing strategies to support the community during difficult times and to promote stability and adaptability in the face of changing conditions.

13. Impact on Education:

- Is there an impact on education in your area?

In Soraguna village, there have been times when the education sector has been impacted and others when none. It is critical to understand the nature and causes of these effects in order to support and improve the village's educational system and ensure continuity and high-quality instruction for the residents.

14. Insurance Coverage:

- Do you have insurance coverage for potential damages caused by the rainy climate?

The residents of Soraguna village may not have access to financial protection in the form of insurance policies to lower risks related to their health, their property, or other insurable events as there is currently no insurance coverage for the community. Understanding the village's insurance situation is essential to assessing the community's financial soundness and may help direct efforts to raise knowledge and accessibility of insurance.

15. Emergency Services:

- How would you rate the responsiveness of emergency services: prompt, delayed, or inadequate?

both "delayed" and "inadequate" poor the collected information outlines the issues the hamlet of Soraguna is facing with its emergency services. It is imperative that these issues are resolved to ensure the safety and well-being of the community's residents as well as to improve emergency readiness. A more effective and efficient emergency management system might result from improving the emergency services' adequacy and responsiveness.

16. Community Support:

- Is there community support in dealing with the current climate challenges?

Soraguna hamlet receives varying degrees of community support, which can be classified as active ("yes"), limited ("limited"), or not recorded ("no"). To increase the welfare of the village's residents, conquer problems as a team, and create resilience, it is imperative to comprehend the dynamics of community support. Efforts to strengthen support networks and community relationships may lead to a more resilient and cohesive community.

17. Community Overall Perception:

- How would you describe the overall perception of the community: concerned, indifferent, or unaware?

In general, people in Soraguna village have differing perspectives, and there are times when they are ignorant, anxious, or uninterested. A comprehensive grasp of different views is crucial for community leaders and stakeholders to effectively communicate and handle concerns. This will foster the growth of an informed and engaged community.

18. Expecting Support from Community:

- Do you expect support from the community in addressing the challenges posed by the rainy climate?

The majority of the responses demonstrate a common belief in supporting one another, and Soraguna village demonstrates a constructive and common expectation of assistance from the community. It is vital to have this sense of community support to develop resilience, confront issues head-on, and create a welcoming environment for all residents.

Summary Analysis

