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SAMUDERAMAPS: WATER QUALITY MAPS FOR MARINE AND RIVER ECOSYSTEMS

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ABSTRACT

There is a lack of water quality maps available right now, especially in the northern regions of Malaysia. The goals of SamuderaMaps are to achieve the conservation of marine ecosystems and to improve the economic profits for rural communities. SamuderaMaps is developed by combining data on the most recent state of the water data with Geographic Information System (GIS) technologies. SamuderaMaps is a ready-made product that consists of water quality maps of physicochemical water parameters, including water nutrient parameters, covering the area of Sungai Kilim, Pantai Kok, Pulau Dayang Bunting, Pulau Tuba, and Sungai Merbok in Kedah. At a reasonable cost, SamuderaMaps offers a variety of maps in both paper and digital versions. These maps are designed to meet the needs of a diverse audience of customers, including social and economic players and local communities. In terms of the contribution that it can make, SamuderaMaps can help environmentalists monitor the levels of water quality in locations that are difficult to access or those that have a high degree of biodiversity. In addition, SamuderaMaps helps conduct site-selection analyses to promote the long-term sustainable development of mariculture regions, coastal tourism destinations, and fishing hotspots. SamuderaMaps is congruent with the Sustainable Development Goals established by the United Nations, particularly SDG 14: "Life below water," SDG 2: "Zero hunger," SDG 3: "Good health and well-being," and SDG 13: "Climate action."

Keyword: *Conservation, Marine, Livelihood, Sustainable, Water Quality*

1. INTRODUCTION

Traditionally, water quality maps were created without taking spatial or temporal perspectives into account (Kamaruddin et al., 2018). Several researchers are presently assessing the feasibility of integrating water quality data with geospatial technology (Kamaruddin et al., 2022). Currently, few water quality maps are available in the northern regions of Malaysia (Kamaruddin et al., 2019). The goals of SamuderaMaps are preserving marine ecosystems and enhancing rural communities' financial well-being.

2. FINDINGS

SamuderaMaps has the potential to aid environmentalists in monitoring water quality in hard-to-reach or highly biodiverse regions. SamuderaMaps is also helpful for site-selection analyses to promote the long-term, sustainable development of mariculture regions, coastal tourism destinations, and fishing hotspots.

3. METHODOLOGY

Current water quality data and Geographic Information System (GIS) technologies were combined to create SamuderaMaps. SamuderaMaps is a prefabricated product comprised of water quality maps of physicochemical water parameters, including water nutrient parameters, for Sungai Kilim, Pantai Kok, Pulau Dayang Bunting, Pulau Tuba, and Sungai Merbok, Kedah.

4. CONCLUSION

SamuderaMaps aligns with the Sustainable Development Goals established by the United Nations, specifically SDG 14: "Life below water," SDG 2: "Zero hunger," SDG 3: Good health and well-being; SDG 13: Climate action.

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