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Exploring Practices and Policy of Rainwater Harvesting under Climate Change- Case Study of Water- Stress in a Rural Community, Trinidad.

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Abstract

Climate Change Projections have revealed fourteen percent (14%) rainfall reduction and five (5%) increase in potential evaporation in the small island of Trinidad by 2050. Rainfall is estimated to further shrink by twenty-one (21%) and potential evaporation further increase by 8% in 2100. Trinidad has also experienced challenges in maintaining sustainable water production due to greater occurrences of droughts in recent years. The increasing frequency and severity of droughts during the dry season is linked to the more intense episodes of the El Nino - Southern Oscillation which cause drier conditions in the southern Caribbean.

In response to these climate change challenges; the study examines rainwater harvesting as a sustainable and successful tool to provide water for water- stressed areas. The paper explores a rural community in Trinidad where the residents are unable to secure a reliable supply of safe drinking water. Access to potable water is a long-term challenge as the community is off the national water supply grid. Rainwater Harvesting (RWH) has been adopted by the residents of the community as a primary means of a drinking water source and it is now considered a feasible solution. This study implemented a mixed method approach to assess the demographics, sources of domestic water, its primary uses, and household water practices by conducting a survey of households that currently use rainwater. The results demonstrate the importance of rainwater and the need for proper management of RWH techniques to improve water security within the community.

The paper also presents an analysis of the policy of rainwater harvesting in Trinidad. It reviews the accomplishments of the policy’s adoption, and then discusses the impact of the policy on water management. Financial investment from public and private sectors and non-Governmental organizations has stimulated needs assessments of water-stressed communities and successful implementation of such systems. Building national capacity through such policies and incentivizing behavioral and social change empowers vulnerable and water-stressed communities to adopt sustainable rainwater harvesting practices.

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