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Abstract

The impact from climate change may be more severe in developing countries, such as Guyana, where there is a high level of poverty, creating potential risks like damages to ecosystems, water resources and coastlines, impacts on food resources, particularly food crops, and health. At the community level, climate change damages are often centred on the environment, which is the main source of livelihood for rural communities. Livelihood opportunities DUH RIWHQ LQVWLWXWHG LQ WUDGLWLRQDO DFWLYLWLHV VXFK DV DJURIRUHVWU VXFK DV WRXULVP PRQRFXOWXUH DJULFXOWXUH DQG ODUJH VFDOH ¿VKLQJ 7KLW to climate change faced by two indigenous communities of Santa Rosa and Waramuri along the coast of Guyana; GRFXPHQWHG FOLPDWH FKDQJH YXOQHUDELOLWLHV WKDW DUH OLNHG WR FRPP current indicators as well as potential coping strategies to climate change used by these communities.

Keywords: Adaptive capacity; Climate change; Coastal community; Guyana

Introduction

Global average surface temperatures have increased by 0.6°C within the 20th century [1]. In countries such as China and India [2], climate change will be crucial [3]. The availability and access to the necessary human, social, natural and financial resources determine the strength of a community, their vulnerabilities and their adaptive capacity

[6]. Fluctuation in weather patterns can increase food prices, a social and financial dilemma for the poor. Globally, a 2°C rise in temperature could cost about 1% of the world's GDP [7]. In Guyana, temperatures have transcended the norm within the last century (1909-1998) with an increase by 1°C in mean annual temperature [8]. Impacts from climate change create potential risks such as damages to food and water resources, flooding of populated coastlines, and the impairment of ecosystem services [9], and the latter being the basis for many traditional livelihood opportunities such as agroforestry, hunting, gathering, and fishing. Of the poor communities within the ten (10) administrative regions of Guyana, communities in Regions 1, 8 and 9 were deemed the poorest as their main economic livelihood is derived from agriculture and forest sectors. As sea water moved upstream into agricultural areas and crops failed.

According to Wahlström and Weber [12]:

"The most severely affected areas are Region 1 (north-west) and Region 9 (south-west), home to some 23,000 indigenous Amerindians,

¹ [4]. Poor communities often do not have access to all or some of these vital resources, augmenting the vulnerability to climate change [5]. For example, poor communities often thrive on agricultural resources. Warmer temperatures lengthen growing seasons and increase carbon dioxide in the air which produces higher crop yields while simultaneously decreasing soil moisture which creates shifts in production patterns and the need for man-made irrigation systems

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¹Adaptive capacity refers to the ability of a system or a community to adjust to climate change effects, to moderate potential damages, to take advantage of opportunities, or to cope with the consequences [3].

²Vulnerability is the degree to which a system (or a household or a community) is susceptible to, and unable to cope with, adverse effects of climate change [3].

³This assessment is based on the Enumeration District Marginality Index (EDMI) and the Living Conditions Index (LCI) [10].

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1 and 2 for organisations functioning within Waramuri and Santa Rosa respectively). Organisations include the Guyana Marine Turtle Conservation Society (GMTCS), the Guyana Election Commission

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