

Climatic Injustice; Guyana's Case

Reshana L. Thomas*, Michael S. Muli*, Maria G. Contreras Hernandez*, Nelson M.K Boinnet*

* College of Environmental Science & Engineering, Tongji University

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Abstract- Climate Change is a global issue affecting many nations worldwide. The main drivers of climate change are well known and continues to be pedaled by highly industrialized countries who reap the benefits of their economic activities. The impacts of climate change however are not limited spatially at its source. Nations like Guyana that contribute very little to the problem face harsh consequences of climate change. Guyana is a historically low emitter of greenhouse gases. Guyana's wide expanse of rainforest even compensates for some global emissions footprint yet Guyana is one of the most vulnerable countries. Guyana's coast is particularly susceptible. This is very unsettling as 90% of the country's population reside on this narrow strip of land. Despite having historically low emissions, this small nation will pay a big price should the efforts to constrain global temperatures below the 1.5°C as stipulated by the Paris Agreement. Potential consequences include flooding from coastal inundation and increased rainfall, crop failure due to changing weather patterns and worsening drought in some areas. The locational issue of the problem in Guyana's case is amplified by inadequate data or information and technical capacity for timely and effective adaptation planning and limited financial resources to confront these impacts head on. Recommendations for a more just reality include compensation by large polluters and payment for climate balancing services.

Index Terms- climate change, climate justice, global warming, Guyana

I. INTRODUCTION

Climate change is arguably one of the paramount predicaments of our generation. The difficulty doesn't apply only to the phenomenon but also in establishing a widely recognized definition. There are many definitions but two of the most popular are examined herein. Climate change as defined in the Intergovernmental Panel on Climate Change (IPCC) denotes a change in the state of the climate that can be recognized (for example using arithmetical tests) by changes in the mean and/or the variability of its properties. These changes would have to be evident for an extended period of time, usually decades or longer. The changes referred to can be observed in climate over time, whether due to natural variability or as a result of anthropogenic activities (IPCC, 2014). On the other hand, the United Nations Framework Convention on Climate Change (UNFCCC) defines climate changes as alterations in the composition of the global atmosphere that is attributed to anthropogenic activities, directly

or indirectly. The changes would need to have dire consequences on the natural climate variability over a comparable period of time (UNFCCC, 2011). Both definitions are similar in that they recognize the role of anthropogenic activities in the process and that the change must occur over a considerable time frame. They differ in that the former definition places more balanced blame on natural and human induced change while the latter pin points human activities as the main driver for the change.

Impacts of climate change are vast and varied. The Intergovernmental Panel on Climate Change (IPCC) published a special report on the impending impacts should global temperatures continue to rise. These range from species extinction, ecosystem collapse, habitat destruction, sea level rise and even widespread climate refugee crises induced by cities and parts of countries becoming uninhabitable (IPCC, 2018). After thorough consultation, recommendations were made to slow or reverse these consequences by limiting global warming to a change of no more than 1.5°C in order to avert adverse climate induced events (IPCC, 2018).

Climate injustice becomes very evident when the main contributing countries to the drivers of climate change are matched to the countries most vulnerable to the impacts. Climate injustice can be defined as the uneven contribution to and effects of climate change (Marcotullio, 2015). It is very frequently remarked that those countries that have contributed the least to the changing climate are affected the most. This sentiment is not only in reference to the developed as opposed to developing world divide, but remains true within and among sub-national units (Marcotullio, 2015).

Guyana is a small country classified as a Small Island Developing State (SID). Guyana, like many SIDs, is particularly vulnerable to impacts of climate change because of location, inadequate data or information and technical capacity for timely and effective adaptation planning and limited financial resources (UNFCCC, 2015). Guyana's coast is particularly vulnerable. The narrow strip of land is home to 90 % of the country's population and is the economic center for 75 % of the GDP. It would therefore serve as an incredible setback for the nation should the coast be impacted negatively.

In this paper, the climate injustices that Guyana is subjected to are discussed as physical, social and economic strictures. These are discussed following a thorough argument as to why the potential implications of climate change are unfair to Guyana.

The climatic injustices are examined in regards to the triple injustice of Climate change as outlined by UNESCO. These are that; climate change is hitting the poorest first, those affected did not cause it and are powerless to stop it and the polluters aren't paying (UNESCO, 2010).

A detailed discussion follows.

II. GUYANA'S VULNERABILITY TO IMPACTS OF CLIMATE CHANGE

Guyana's Initial National Communication to the UNFCCC (2002) reports climate model projections supposing a development path which results in a doubling of carbon dioxide concentrations by 2020-2040 and a tripling by 2080-2100 (OCC,2018). Following these expectations, temperature is projected to increase by approximately 1.2°C above 1995 levels before the first half of this century. Further, higher increases in southern regions of Guyana and during the second arid season (August to October) are anticipated. Model prognoses of sea level rise for Guyana signpost a rise of about 40cm by the end of this century, or closer to 60cm if the effect of melt water from land ice is reflected (UNDP, 2019).

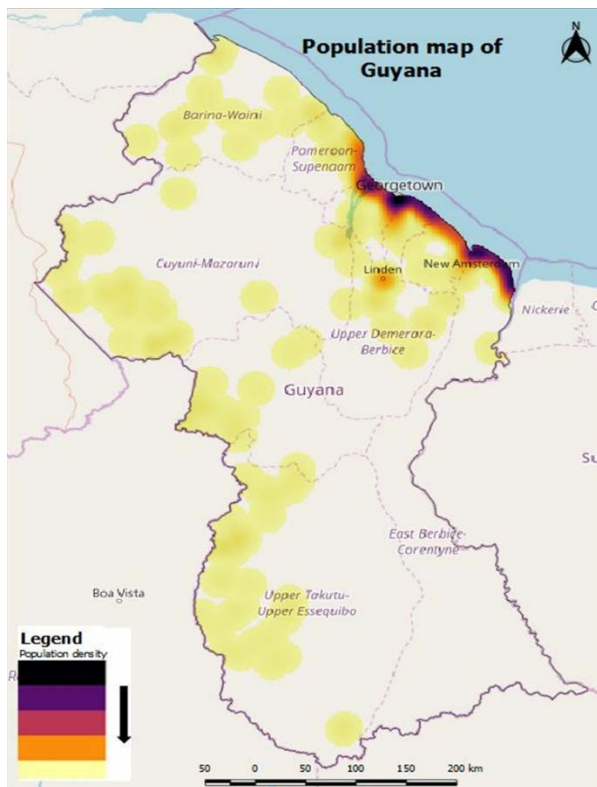


Figure 1: Population Density map of Guyana

90% of Guyana's population and 75% of the core economic activities concentrated on the low-lying coastal plain of Guyana. This makes the country particularly vulnerable to negative effects of climate change. These impacts have potential to adversely affect the economy, human livelihoods and ecosystems of the small tropical nation. Guyana at present writhes with high variability in rainfall, critical droughts sporadic with heavy precipitation and flooding. Floods from both precipitation and

inundation from the Atlantic Ocean. This manifestation may be aggravated by climate change (OCC, 2018).

A demand for fresh water resources is imminent due to increasing temperatures. This may be an issue as the evaporation rates will also increase thereby creating a deficit. Increasing sea level may escalate the force of storm surges thereby increasing risk of flooding along the populated and economically important coast. Salt water intrusion from sea level rise is also another area of concern. Domestic and industrial water supply channels may be adversely impacted. The predicted sea level rise coupled with extremes in rainfall events and storm surges and increased wave action will increase the level of flooding in Guyana significantly (OCC, 2018).

Guyana's population is anticipated to be extremely at risk from the antagonistic effects of climate change. The foreseen impacts are inclusive of recurrent flooding and sustained inundation of settlements, epidemic of water-borne diseases and amplified incidence of diseases in general. Further, possible contamination of potable water and reduced food supply are anticipated. This pose serious human health risks and can result in deaths. Climate change is also likely probable to result in flooding and inundation of valued agricultural land thereby attributing decreases in agricultural production owing to loss of land, heat stress, decreased soil moisture and an increased incidence of pests. In addition, increased soil erosion and loss of crops instigated by increased frequency of heavy rain and drought, and augmented heat stress in livestock caused by higher temperatures (UNFCC, 2002).

Guyana's economy is highly likely to be adversely impacted by falling production rates in the agricultural sector. The energy sector is also expected to be impacted by climate change, as higher temperatures upsurge electricity demand (predominantly for residential, commercial and industrial air conditioning). Guyana is predominantly susceptible to climate change because it is a poor developing country, with inadequate financial capacity to acclimatize to or alleviate the worst impacts of climate change. This is amplified by the significant role that agriculture, a part of the economy likely to be harshly affected by climate change, plays in Guyana's economic output (The Stern Review, 2007)

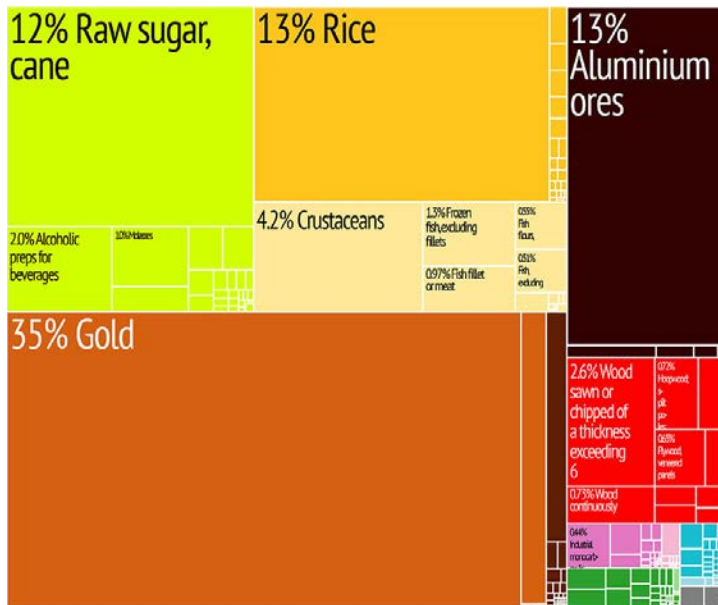


Figure 2: Economic Composition of Guyana

III. WHY IS CLIMATE CHANGE UNFAIR TO GUYANA?

UNESCO identified three main reasons climate change is disproportionately unfair. These will be discussed with specific focus on the Guyana case. Known as the triple injustice of climate change, they outline why efforts to tackle climate change need to be more just (UNESCO, 2009).

The first injustice is that climate change will hit the poorest nations first and the worst. This is particularly true in Guyana's case. Guyana is one of the poorest countries in the southern hemisphere. With a GDP of a mere 3.6 billion USD, the country is financially incapable financing the migratory actions necessary to avoid catastrophe (World Bank, 2010). Further, the already small economy faces the threat of decline as lands will become less and less cultivatable.

Secondly, those most affected did not cause it and are powerless to stop it. Guyana is a low emitter of greenhouse gases however it is a forced rider of the consequences of rising global temperatures. Rising temperatures indirectly cause sea level rise through melting of land ice. Guyana's low lying coast which is home to majority of its population face the hazard of flooding and displacement. Even if Guyana continues to pledge allegiance and fulfil those

Figure three illustrates the injustices discussed above. Image 'a' on top depicts climate equity for the year 2010 while image 'b' shows the same for 2050.

Countries with emissions in the highest quintile and vulnerability in the lowest quintile are shown in dark red (the climate free riders), and those countries with emissions in the lowest quintile and vulnerability in the highest quintile are shown in dark green (the climate forced riders) (Althor, 2016).

It can be observed that in both cases, Guyana (highlighted in the square black box) appears in a dark shade of green. This indicates that both in the past analyses and future predictions on climate

pledges to international climate agreements by keeping its vast rainforest standing, the country will still be powerless to avert the impending doom.

Third and finally, the large emitters are not paying for the consequences of their actions. This is a very important point as it highlights how unjust the situation really is. At the cost of ruining fragile ecosystems and economies the world over, some nations are making economic strides while emitting potent amounts of greenhouse gases into the atmosphere. It would seem fair that a portion of the economic prosperity be dedicated to aiding in mitigation and adaptation strategies for countries who are doing their part in aiding in the fight. Guyana is the second most densely forested country in the world. Keeping its forests standing is crucial to the global sequestration of carbon dioxide. Further, Guyana is also aiming to transition into a green state by 2025 by investing in renewable energy sources and sustainable practices.

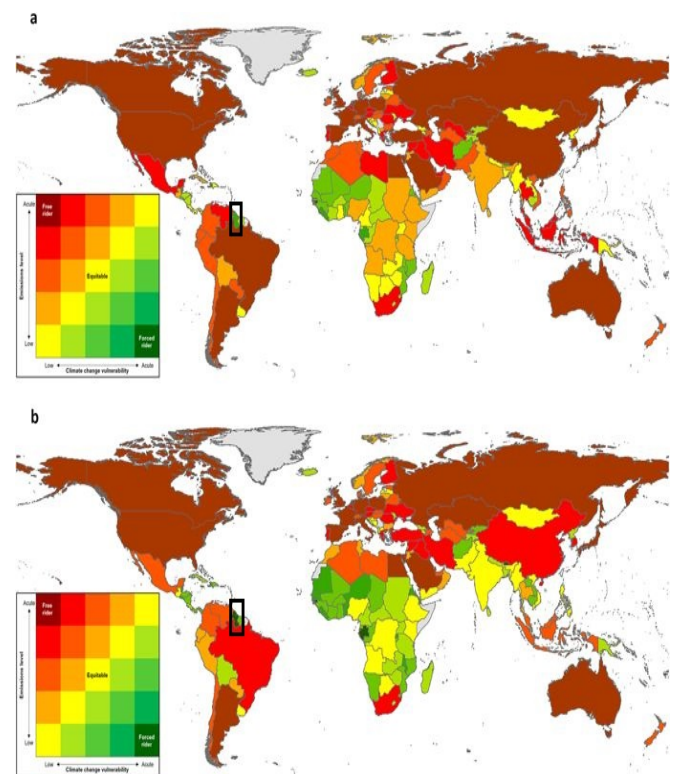


Figure 3: Climate Equity 2010 (a) and Climate Equity (2050) (Althor, 2016)

equity, Guyana has been a forced rider of the consequences. Simply put, the impacts of climate change borne by the nation are unjust considering its non-existent role in accelerating the phenomenon.

IV CONCLUSION

In an attempt to avert the impending disaster that climate change carries to the world in general and developing countries in particular, a resolute international effort is required. That is inclusive of leadership and cooperation from developed and developing countries alike. Climate equity for small countries like Guyana cannot be achieved unless the injustices are recognized and a determined effort is made for necessary compensation.

Compensation in the form of financial support to aid mitigation and adaptation strategies, reduction of emissions and a global pollution/ emission tax are some of the way that climate injustices borne by Guyana can be addressed.

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AUTHORS

First Author – Reshana Thomas, BA Geography (2015)- University of Guyana, MSc. Environmental Science (Current)- Tongji University, reshana.thomas@yahoo.com
Second Author – Michael S. Muli, B.Eng. Environmental and Biosystems Engineering (University of Nairobi 2015), MSc. Environmental Science (Current), Tongji University, michaelmuliy@gmail.com
Third Author – Maria Contreras Hernandez, Industrial Relations Professional, Tongji University, mgch15991@hotmail.com
Fourth Author- Nelson M.K Boinnet, Dryland Natural Resources Management (Africa Nazerene University), BSc. Environmental Science (Current) Tongji University. nboinnet@yahoo.com
Correspondence Author – Reshana Thomas, reshana.thomas@yahoo.com , reshana.thomas@tongji.edu.cn , 19802102358.