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**The Reality of the Small Islands Developing States (SIDS)
as a Special Case for Sustainable Development:
The Butterfly Effect**

Butterflies are beautiful but fragile insects. It is amazing to think that with one flap of their wings they could exact a disaster such as a hurricane. This embodies a metaphor for the Butterfly Effect Theory, that a small change during the beginnings of an event can have a drastic effect on its outcome. If that butterfly was to not have flown at that specific time, a hazard turned disaster may not have occurred.

This concept can prompt one to wonder that in the past, if a simple action was altered, maybe the circumstances of our world would be different.

The theory also highlights how very intertwined the earth and all its inhabitants are. We too often forget that our actions can have drastic consequences, which may affect our homes, our communities, our countries, our planet. However, Small Island Developing States (SIDS), are at greater risk to undergo these unfavourable ramifications.

One of the defining characteristics of being human is freewill, the ability to decide without outside influences. The question remains, is it truly a benefit if our destructive behaviour is the result? Risking our livelihoods?

The effects are seen far and wide, but most felt in the warming of the earth's climate. This is due to global warming, caused by the greenhouse effect. Typically, the sun's rays carry heat into our atmosphere, where some is absorbed by the surface and some is reflected into space.

Thanks to human activities, for instance, burning fossil fuels and deforestation, the chain reaction has begun by triggering a greater presence of greenhouse gases. Consequently, much of the reflected heat becomes trapped in the atmosphere and radiated to the surface. Thus, the planet warms. It is essential to note that the earth's exterior is not modelled to sustain itself with such a temperature rise in a short period of time, 200 years.

This rapid heating has produced major changes on the surface. These include:

- Migration of various species to the north where it is cooler, and they face better chances of survival.
- Melting of ice around the world, specifically glaciers, and the expansion of water molecules.
 - o Hence, sea levels rise by 3.4 mm per year. The more the years past, the faster the rate.
 - o There is more frequent coastal flooding as water slowly captures land.
- Fluctuations in precipitation patterns. In some areas there has been extreme rise or fall in rainfall.
 - o Elevated amounts equate to flooding and damage to homes, infrastructure and crops.

- o Diminished amounts equate to periods of drought, which also harm crops.
- Stronger and more frequent weather systems, for example hurricanes.
 - o These can cause extensive devastation when they encounter land.
- Acidification of oceans due to the absorption of vast quantities of carbon dioxide.
 - o Sea creatures and organisms may die or develop diseases.
 - o Destruction of coral reefs as it becomes difficult to build calcium bicarbonate shells. Additionally, the waters may become corrosive enough to dissolve these delicate structures.
- Active reproduction of dangerous species, such as mosquitos, ticks, jellyfish and crop pests.
 - o These could result in the outbreak of diseases for example, the ZIKA virus, malaria or also cause further damage to agriculture.

Despite being very grave, these issues are only the tip of a rapidly melting iceberg. Our destructive habits have led to:

- Pollution through the releasing of toxic waste into the sea and surrounding nature.
- Improper disposal and burning of garbage, which scars the environment and releases more greenhouse gases.
- Developments along the coast which devastate natural habitats and breeding grounds.
- The overexploitation of resources, including fossil fuels, sea food and forests.
- The ruin of the natural world through urban sprawl.

The most common threads weaving through these problems are nature and water. Due to the small size, restricted supply base and isolated disposition of SIDS, they are extremely reliant on these two resources. Our actions, however, have only led to their decimation.

The economic activities that are the resulting foundation for these islands are fishing, tourism and agriculture. As most forms of industry, they provide employment, food security and generate foreign exchange which greatly benefits the economy.

Imagine if this fragile and interconnected web was to lose these crucial strands. What would be the outcome? To complete the cycle, the people of these states would, as we Jamaicans say, “feel the bitter end of the stick.” Living conditions may decrease whilst the cost of living increases in an actively shifting environment. Persons may confront:

- Loss of produce to droughts, heavy rainfall or pests, negatively affecting income and food supply.
- Lack of job availability due to the deterioration of the source of employment, the environment.
- Health problems such as heat strokes and respiratory issues from air pollution.

Not only would the population of these states suffer but the economy would also take a blow without capital to finance the operating of the country or sufficient resources.

Furthermore, if these troubles persist with inadequate intervention, the country’s population may migrate, to find a more suitable space to reside. With mass brain drain, the fear is that there will

be no working class to support the economy. These people represent the backbone of the country and with the gap they leave, SIDS could advance into destitution.

The truth is that many of the effects that islands face is not their fault. Their industries are still developing, meaning they contribute minute amounts to global warming, of which they severely feel the penalties.

Altogether the situation is dire. The current trajectory was created due to unsustainable development and now SIDS face a battle on all fronts, environmentally, economically and socially. In the coming years they could disappear entirely. To prevent their demise, some change must take place, so that they become places that people want to live, work, raise families and do business not only for now, but the future.

If this sensitive cycle does not indicate that these countries are perfect candidates for sustainable growth, a positive butterfly effect, then humanity is far past saving.