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**A Caribbean
Theology of the
Environment
(Part 1)**

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Introduction

It is rather instructive that as I was in the throes of preparing this paper the world observed Earth Day 2015. According to Gnanakan (2004) on 22 April 1970 the first Earth Day, twenty million Americans went into the streets and into the parks and auditoriums to demonstrate for a

healthy, sustainable environment. That first Earth day claims to have achieved a rare political alignment, enlisting the support of all political parties in the US, rich and poor, urban dweller and farmers. (Gnanakan 2004, 15). Some forty-five years later the day passed by in the United States without much fanfare and in Jamaica even less of a whimper.

This is not to say that there is nothing substantial in place for environmental protection and policy in Jamaica, in fact far from it. There is the National Environment and Planning Agency (NEPA), Jamaica Environment Trust (JET), The Environmental Foundation of Jamaica, Caribbean Coastal Area Management Foundation, Jamaica Conservation and Development Trust, Negril Environmental Protection Trust and the Anti-Dumping and Subsidiaries Body, along with other civic groups that seek to keep before our consciousness the importance of environmental care.

Additionally, according to Taylor (2015), “At the national level, in 2011 Jamaica set up a ministry with climate change as part of its name and mandate. . . . It is fair, then, to say that some of the

pieces are falling into place, though one cannot claim that the efforts and initiatives are sufficient or even nearly enough.” In fact the anecdotal evidence suggests that the average citizen does not have such matters high on their list of priorities. This is borne out by Taylor (2015).

The Jamaican government commissioned a Knowledge, Attitudes and Practices Behavioural Survey in 2012 as part of its preparation activities under the Pilot Project for Climate Resilience. Of the National Household Survey sample, most people (82.6%) indicated that they had heard the term ‘climate change,’ with most (56.4%) also able to associate it with a variation in global climate, temperature or weather patterns. However, the majority also indicated that they did not know much or anything about the risk it posed to their community and that they had no idea or were not sure what could be done to prevent or lessen the effect of climate change on the community. It is clear that much more needs to be done to bring to the awareness of the citizenry the current realities that those who are in the forefront of research and capacity building readily recognize.

Taylor (2015) echoes the writer’s sense of urgency as he builds his case for a radical shift in our positioning on these matters. “Climate change is an issue of our times – one that the Caribbean cannot avoid contending with, preferably through voluntary action, now as opposed to later, and with a paradigm shift in thought and action equivalent to the shift necessitating it.”

As far as our religious preoccupations are concerned, the outlook is even more dismal. The absence of the voice of the church on environmental matters is very deafening. Douglas (2009) comments that, “While acknowledging the importance of climate

change and sustainable development issues, Jamaica's churches are not united in taking action to protect the environment.” Douglas (2009) represents an Environment Watch group. He states further, “Church leaders admit to the shortcomings of their institutions in this area, stating that concerns of unemployment, crime and HIV and AIDS in many of the communities they serve tend to overshadow issues involving the environment. Gary Harriott, general secretary of the Jamaica Council of Churches (JCC), said while stewardship of the environment is in keeping with their churches' theology, there was no concerted action on the matter.”

Harriott is cited as admitting that “It's one of those areas in which we want to become more intentionally engaged, although we don't have any particular programme at the moment.” Jamaica is arguably one of the most popular islands of the Caribbean. The natural beauty lures nature lovers from around the world in what is an increasingly lucrative form of tourism. At the same time there is a sense in which one needs to question the extent to which our citizens appreciate this and recognize the imminent dangers in light of the steady march of development projects.

Middleton (2013) recognizes this beauty and the threat to this beauty. He states, “The Caribbean is a region of tremendous natural beauty....Yet for all its undeniable natural beauty, the Caribbean is a region that is increasingly marred by pollution (for example unsafe levels of toxins in fish in the Kingston Harbour)... the ‘forest, waters [and] shining sand’ of the pristine Caribbean are becoming more and more compromised by the human footprint.” (Middleton 2013, p. 79). Taylor (2015) also voices this opinion, “The Caribbean is inherently climate sensitive – who we are and how we live is inextricably linked to climate.” This is described more specifically by Taylor (2015) as climate sensitivity.

“Understanding climate becomes important for the Caribbean given its inherent ‘sensitivity’ to climate change. By sensitivity, we mean that Caribbean countries – their economies, the daily ordering of the life of their people, and their natural systems – are extremely responsive to variations in climate on whatever timescale they occur (whether variability or change). In fact, the Caribbean is perhaps disproportionately sensitive to climate when compared to other regions of the world.” In light of this reality, it is incumbent upon us to carefully consider the current realities and chart a course of action.

This paper seeks to explore the nexus of environmental concern and sustainable development, using as cases in point the proposed Goat Islands development, and the disposal of garbage and untreated sewage in the gullies. This is towards establishing the rationale for a robust Caribbean theology of the environment. The two cases in point (Goat Island and Gullies) will be explored, followed by an examination of the Biblical basis for environmental issues to be a part of the ministry of the church in Jamaica as a segue into the building of the case for a Caribbean theology of the environment so as to set the stage for a multi-sector change in posture towards the environment aided and abetted by the church. I agree with Taylor (2015) that “Since the region’s sensitivity and vulnerability are pervasive, adaptation strategies must target all spheres of Caribbean life. This justifies a multi-sectoral approach to response strategies.”

Climate change in Jamaica

While the survey cited earlier shows a low level of awareness of climate change terminologies, I suspect that a greater number of persons would indicate that they are experiencing changes in the climate of the Caribbean. It is quite likely that most will agree that

the times are 'hotter now-a-days'. Jamaica Observer writer, Kimone Thompson (2015) reports on the voicing of concern for the environment by United Church clergy, Naggie Sterling.

Sterling is quoted as saying, "Right here on our little piece of rock, homes and buildings that were well within the legal distance from the shore now find themselves too near to the shoreline. Many of our beaches have simply disappeared, rainfall is becoming less and less and rising temperatures haunt us day and night." Sterling seems to be quite in agreement with what has been argued thus far in this paper. Thompson reports further: "Sterling argued that man, in general, has abused his role as steward of the Earth, which he said has resulted in extreme weather events such as more intense and more frequent hurricanes and longer, drier periods of drought that cause hunger, disease and displacement among vulnerable populations. He referenced the rising temperatures, rising tides, beach erosion, and decreasing rainfall associated with climate change."

Taylor (2015) makes an overwhelmingly compelling case for the reality of climate change in the region. He states, "The mean warming trend previously noted for the Earth over the past century is also evident in Caribbean temperature record." The fact that Jamaica is an island should peak our interest in the matter of sea level rise. In this regard, Taylor (2015) informs us that "Sea level rise is also resulting in beach erosion. Robinson et al. (2012) reported the net average shoreline recession for the Long Bay area in Portland, Jamaica, between 1971 and 2008 as 8.4m or about 23 cm per year. In addition, he says that a "study estimates that a 1-metre rise in sea level will affect some 8% of major tourism resorts in Jamaica while under a 2-metre rise, approximately 18% will be adversely affected.

To protect these resorts it is estimated that some 22 miles of coastal protection will be needed at a minimum cost of US\$92.3 million to a high of US\$993.8 million.”

A report on the impact of climate change produced by the Coastal Area Management Foundation (2012) conveys a similar note of concern for coastal areas: “The FAO (2011) cautions that climate change is projected to impact broadly across ecosystems, societies and economies, increasing pressure on all livelihoods and food supplies including those in the fisheries and aquaculture sector. Warnings of this nature have serious implications for coastal communities such as Old Harbour Bay. Climate change induced sea level rise which is expected to result in the loss of its land mass is predicted, to be around 101.9km² pending sea level rise and storm surges.”¹

The warnings from Taylor (2015) widen in scope: “In addition to coastal settlements and infrastructure, examples of other emerging vulnerable groupings and sectors that require attention under the new climate regime include endemic fauna and flora, outdoor workers, the homeless, the chronically ill, the elderly and very young, those suffering from respiratory problems, and small businesses. In the last 14 years (since 2000) Jamaica has been affected by 12 tropical storms, hurricanes or intense rain events. Each event has cost the country a percentage of its GDP for recovery efforts and, combined, they have resulted in losses and damage amounting to approximately \$128.54 billion”.

¹ http://www.ccam.org.jm/publications/agriculture-disaster-risk-management-plan-old-harbour-bay-st.-catherine/at_download/file).

The danger is not very far off, if we are to take Taylor (2015) seriously. He reports that Mora et al. (2013) try to determine the timing of ‘climate departures’ or the “year when the projected mean climate of a given location moves to a state continuously outside the bounds of historical variability”.

They suggest that disruptions in ecology and society may be tied to these dates. They show that unprecedented climates “will occur earliest in the tropics and among low-income countries, highlighting the vulnerability of global biodiversity and the limited governmental capacity to respond to the impacts of climate change”.

In some cases the climate departure date determined by Mora et al. (2013) is imminent. For example, temperature departures or the first year when even the coldest mean temperatures achieved thereafter is warmer than the warmest temperatures experienced to date, occur earliest in the tropics – in the early 2020s through to mid-2030s for the Caribbean. Of all cities analyzed, Kingston will be the second city to reach this threshold (in 2023). Other climate departures, they determine, have already been exceeded. Mora et al. (2013) found that ocean acidity already exceeded its historic bounds in 2008 (give or take three years).

At the time of writing of this paper there was a clear sense of the discomforting humidity of the night’s air. This was confirmed by a report from the Meteorological Service during the nightly news on Television Jamaica (TVJ), which indicated that various sections of the island experienced temperatures in excess of 37 degrees Centigrade. This was notable because the previous high mark used as a benchmark was 34 degrees centigrade. Taylor (2015) argues

that “By the end of the century, the probability of extreme warm seasons is 100% and the magnitude of the warming is ‘large’ in comparison to historical warming. The warming is everywhere across the region and greater over the bigger islands (Cuba, Hispaniola and Jamaica).” Here we have scientific evidence to support what the anecdotal evidence has been indicating all along. Taylor (2015) further cautions that “In terms of human perception, the changes in temperature translate into days and (in particular) nights feeling hotter than they used to, a lack of significant nighttime relief from hot daytime temperatures, and a sense that the hot days and nights associated with summer are starting earlier and persisting longer in the year. The cumulative impact of warmer days and nights, higher sea levels, more intense rain events and more frequent hurricanes is the gradual but clear emergence of a new climate regime. The new climate regime is characterised by (i) unfamiliarity, (ii) unpredictability, and (iii) unreliability.”

There will be substantial increases in the frequency of days and nights that are considered hot in the current climate. For many Caribbean countries, hot days and nights by present standards occur up to 95% of all days by the 2090s (McSweeney et al. 2010). There will be substantial decreases in the frequency of days and nights that are considered cold in current climate. For many Caribbean countries, these events are expected to become exceedingly rare by the end of the century.

In building his case for the clear and present reality of climate change Taylor (2015) provides an idea of the economic implications. They are staggering. “In the face of changing climate, there is a cost to inaction. Some studies have attempted to quantify that cost. The Stockholm Environment Institute (Bueno et al. 2008), for example, attempted an examination of the potential

costs to the Caribbean if greenhouse gas emissions continue unchecked. The Stockholm study projected costs based on three categories of climate change effects: (i) hurricane damage, extrapolated from average annual hurricane damage in the recent past; (ii) tourism losses, assumed to be proportional to the current share of tourism in each economy; and (iii) infrastructure damage due to sea-level rise and exclusive of hurricane damage, which is projected as a constant cost per affected household. Considering just these three categories, the study estimates that the Caribbean's annual cost of inaction will be US\$22 billion annually by 2050 and \$46 billion by 2100 or 10% and 22%, respectively, of the Caribbean economy in 2004. For Jamaica, the costs as a percentage of 2004 GDP are: 13.9% in 2025, 27.9% in 2050, 42.3% in 2075, and 56.9% by 2100 . Even if the numbers are conservative, the conveyed message is that inaction is costly.

As we examine the data presented by Taylor (2015) it becomes abundantly clear that we are courting danger while rocking ourselves to sleep. Taylor's summary statements speak volumes:

The picture that emerges, then, is one of a region whose future sustainability is threatened in the face of inaction. The goal of sustainable development, when seen as a balance of the traditional pillars – the economic, the social and the environmental – is significantly challenged under future climate change and in the face of inaction. Climate change will have a profound impact on the Caribbean region's geophysical, biological and socioeconomic systems and will deplete national budgets, compromise livelihoods and exacerbate poverty. Climate change has the potential to offset any gains made in the pursuit of priority development objectives such as food security, access to

basic services such as clean water, sanitary living conditions and energy, education, and combatting poverty. Among other things, climate change will transform the environment into a hazard and as such, economic development cannot be premised on it as is currently the case in many of the islands of the region. Jamaica's goal to become the place of choice to live, work, raise families, and do business by 2030 is under threat from climate change.

It must also be noted as Taylor (2015) indicates, "There are, likewise, some social groupings which will bear the disproportionate impact of climate change. The list of some of the most vulnerable is as alluded to before and includes the urban poor, subsistence farmers, the physically challenged, children and the elderly."

Sustainability

As we explore this nexus of environmental stewardship and economic progress, Lindsay-Nanton captures very well the dilemma before us. She argues "from a sustainable development perspective, land has various conflicting features. On the one hand, land as a scarce and fragile resource is an object for environmental protection. On the other, land is equally an asset for economic and social development. It has the capacity for wealth creation, for attracting and locating investment, and for opening up vital opportunities for the development of the financial sector" (Lindsay Nanton 2004, p. 313). The view of development held by Mahbub ul Haq is one that finds traction with her, "The objective of development is to create an environment for people to enjoy long, healthy and creative lives"(Ibid., 13). As far as she is concerned Jamaica has a major long term land management problem on its

hands, which is “the degradation of the limited land area due to a variety of factors, including overuse on account of high population pressures, deforestation and events such as fires.” (Ibid., p.314). The dilemma before the nation unfolds further as we examine the major income generating activities. As Lindsay-Nanton (2004) indicates, “Jamaica’s economy relies heavily on the exploitation of its natural resources. Indeed the country’s major sectors- tourism, mining and agriculture- all depend of natural resources.”

She continues to indicate that “the patterns of economic development and urbanization that have evolved over the years contributed substantially to the deterioration of the island’s fragile ecosystems” (Ibid., 282). It seems to me that her use of the word exploitation here is in a positive sense, but I can’t help but see the gross negative side of it based on the current situational analysis, that is to say, we are in fact exploiting the land in our onward march towards development goals. The challenge “therefore is to promote sustainable development while limiting the negative impact of human activities on our climate.” (Lindsay-Nanton 2004, 284). In this paper, sustainable development, as used by Lindsay-Nanton (2004) “is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development is not just an environmental concept. It requires sustainable social structures, good governance and sound economics. It requires a cross-sectoral vision and sustainable ways of running a society.” (Ibid., 308). The importance of sustainable development should not be lost on any of us because it is of vital importance for countries such as ours which due to their small size are, “highly vulnerable to external economic, environmental and social factors” (Lindsay-Nanton 2004, 308). She offers a chilling example of this: “Two-thirds of Jamaicans, and most of the island’s civil and economic

infrastructure, are found in the coastal zone. Most major roads and both airports...are on the coast. All these resources are vulnerable to sea level rise, and the impact of storms, hurricanes and floods. For example, the runway in Montego Bay has an elevation of 1.2 meters, but the city expects a storm surge of 1.6 metres at least once every 25 years.”(Ibid., 309).

This discourse would be incomplete without discussing the sustainability of the environment itself. The words of Taylor (2015) are of particular relevance here. He argues that “because climate change has the potential to influence all of the other development goals due to its pervasive nature and to continue driving up the attendant costs to pursue such goals in the future, there is great merit in exploring the synergies between responding to climate change and the pursuit of a sustainable development agenda. That is, many of the adaptation strategies suggested are identical to the kinds of action that are needed to ensure sustainable development.” (Taylor 2015).

In a similar fashion Taylor (2014) indicates the idea of sustainability is an integral factor which was taken for granted in the Wisdom Tradition. He contends, “Preserving and maintaining the harmony, order and balanced structure into creation by the Creator was a necessity for a meaningful and flourishing life in the social order.” The point is that the nature of wisdom itself demands an appreciation of and a commitment to the maintenance of this order.

Taylor (2014) draws a quote from the Presbyterian church (USA) to illustrate this further: “As a norm of human behavior, sustainability requires that we relate to the realm of nature in ways that respect its integrity, so that natural systems continue to

function properly, and the earth's beauty and fruitfulness may be maintained and kept [for] sufficient human sustenance, . . . [in order that] life may continue for non-human species. (Ibid., 157 – 158).

It is to their credit that this denomination has issued such a statement. Much more of this level of public chaplaincy is needed from local denominational bodies. The relative absence from the discussion on environmental matters of the church has not escaped the gaze of Taylor (2014).

He not only makes the case that there is an important space for the “biblical-theological perspective to be reckoned with in debates, discussions and conversations, related to environmental integrity and sustainability,” but also indicates the need for such a perspective itself to be redeemed from much misunderstanding. Taylor then makes the all important link between the nexus of economic development goals and environmental sustainability. He states,

Nowhere else is the perspective more pertinent than in those contexts in which social and economic development has been lagging. In these places, great hopes are being placed on rapid technological, industrial, agricultural and infrastructural development. The challenges that this poses for serious environmental and ecological compromise are stark. The impact of these in terms of short term and long-term consequences poses serious dilemmas for public policy decisions as well as corporate planning. (Ibid. 159 – 160).²

² Cf. E.B. Edmonds, 1997.

This is precisely the grappling with which the writer engages. In so far as the overwhelming majority of the Jamaican church has little interest in such matters the writer is alarmed and wishes to sound a clarion call to the religious powers that be to wake from their slumber. As Taylor (2014) puts it, “The peculiar tensions and conflicts that seem to be attendant upon the need to address telling economic and social needs and to make advance in related areas, and at the same time, protect and preserve environmental integrity and sustainability cannot be ignored.” (Ibid.,160). This essential concept of sustainability is echoed in a single sentence by Roper (2012), “We must not merely live but we must live in a way that can sustain life.” (Roper 2012, 23).

This idea had been fleshed out some more by him as he discussed the Jubilee instructions of God to the nation of Israel. He explains that the Jubilee “called upon them to have a Sabbath year every seventh year and every fifty years to make not just the forty ninth year the Sabbath, but also the fiftieth year as well. It called upon the people of Israel to take two years off from tilling the soil and reaping the produce that they had grown. They were to rely upon the fruits that grow wild, the untended vine and the untilled soil.”

This instruction found very little resonance with the Israelites and was hardly even attempted throughout their history. Notwithstanding that, Roper is of the view that there is great merit in abiding by its principle in today’s reality. He states, “If we begin to think about it, the ancient principle that we find so laughable and impractical from long ago has begun to make a come-back. For one thing, we have begun to be more convinced about protecting the integrity of the earth. With climate change, global-warming, aridity, the danger of the earth running out of drinking

water, the melting of the ice cap, rising sea levels and the like. Words like conservation, stewardship, crop rotation, and allowing the land to lay fallow have begun to be once again part of even secular and modern vocabulary.” (Roper 2012, 10 – 11).

Weaver and Hodson are quite accurate in their conclusion, “Sustainable Development will only be achieved as it is accepted by ordinary people going about their everyday lives. For that to happen it must be expressed in a simple practical way: a code of conduct.” We turn our attention at this point to two cases in point that illustrate the tension between economic progress and environmental integrity, the proposed Goat Islands development project and the link between the city’s gullies and the pollution of our territorial waters.

The Goat Islands Development Proposal

Arguably the most trending environmental issue in 2013 and 2014 in Jamaica was the proposed Goat Islands development. Although all indications are that the project has been aborted due to the delays that arose from the outcries against it on environmental grounds, the project provides an excellent case in point for the purposes of this paper. Bruner, Magnan, Rice and Reid (2014) provide us with a summary of the proposed Goat Islands development. “In 2013, the Ministry of Transport, Works and Housing announced that the China Harbour Engineering Company (CHEC) had selected the area on and around the Goat Islands to build a major trans-shipment port and accompanying industrial economic zone. (Bruner, Magnan, Rice and Ried 2014, 17).

According to Roper (2013), “The indication from Dr Omar Davies [is] that the Government of Jamaica is contemplating an unsolicited investment proposal of US\$1.5 billion in Jamaica's

seaport in the Portland Bight Protected Area (PBPA) from the Chinese.” (Roper, 2013). Further important details emerge from Bruner, Magnan, Rice and Ried (2014).

On one hand, success would bring much-needed jobs and economic activity. The third set of Panama Canal locks was set to have been completed in 2015, with operations beginning in 2016 (Tronche 2014). Increased capacity will permit transit by much larger Post-Panamax vessels, and in turn significantly increase cargo traffic through the Caribbean. With Kingston Harbour already second only to the Bahamas’ Freeport in volume handled by Caribbean ports (*Caribbean Journal* 2013), Jamaica is well-placed to attract a significant share of this new traffic and associated demand for services.

The new port is seen as important to Jamaica establishing itself as a key player in this context. Minister of Industry, Investment and Commerce Anthony Hylton has articulated the ambitious goal of making Jamaica the fourth key node in the global logistics chain, along with Rotterdam, Singapore and Dubai (MarineLink 2013). The International Monetary Fund (IMF) also notes the relevance of a planned trans-shipment port and associated industrial area to Jamaica’s goal of increasing its role in global logistics (IMF 2014).

The magnitude of economic benefit expected to accrue from this project was expressed by Davies to Roper (2013): “During the construction phase, the total project is anticipated to employ some 3,000 persons, and when fully operational, the project will employ upwards of 15,000. The Chinese have done their technical analysis and are ready to over the life of the investment, to expend a minimum of US\$1.5 billion.”

Despite such an enormous amount of anticipated foreign direct investment and voluminous job creation projections the proposal encountered a major stumbling block in the form of environmental concerns. This was described by Roper (2013): “The PBPA was so designated in 1999 and encompasses an area of 724 square miles of the Jamaican archipelago. It stretches from Hellshire in St Catherine in the east to Rocky Point in southeast Clarendon.”

The website of the Caribbean Coastal Area Management Foundation (CCAM) indicates that this was created in 1999 by Jamaica's Government under the National Resources Conservation Act (NRCA). The PBPA exists to protect a large marine and terrestrial area of the island. The PBPA is home to birds, iguanas, crocodiles, manatees, marine turtles, and fish, many of which are endemic to the area.³

Roper (2013) adds that “The PBPA is a nesting site for marine birds and endangered turtle species, such as hawksbill and green turtles. This reserve area is said to contain 81 acres of limestone forest, wetlands, sea grass and mangroves. It covers 500 kilometers on land and 1,300 kilometers on the marine side. Little Goat Island falls within the PBPA. It should not be difficult to see why the drawings of swords over this project was inevitable. The project was grand in scope as was the economic benefits, but the loss of this globally recognized and designated protected area and the ripple effects was equally worthy of consideration. This is how the principals at CCAM expressed it: “Due to the location of the proposed site in the core of the Portland Bight Protected Area, reactions have been heated. Building a port on Goat Islands

³ <http://www.ccam.org.jm/pbpa/the-portland-bight-protected-area>.

requires that Jamaica accept a trade-off sacrifice [in] an area of outstanding environmental importance in exchange for development. In Phase 1, the following will be built: an industrial park, support infrastructure, a container terminal, berths, a portside logistics zone, and a coal-fired power plant. http://www.ccam.org.jm/CSF_Jamaica_series_technical_oct2014_web.pdf/view.

The coal powered plant in and itself raises several environmental issues. A coal power plant will increase the carbon footprint of Kingston, St. Catherine and Clarendon exponentially. This does not auger well for overall air quality and will only be adding to the amount of greenhouse gases we produce. Speaking on the matter of global warming, Taylor (2015) makes it very clear that “Human beings are influencing the Earth’s climate by changing the concentration of greenhouse gases (GHGs) in the atmosphere and enhancing the greenhouse effect.” If we think this is just much ado about nothing we are surely misguided. Taylor (2015) asserts that, given the current levels of greenhouse gases in the atmosphere “The implication is that even if the world were to stop emitting CO₂ today, future generations, including those in the Caribbean, will still have to live with the impact of present-day emissions.”

Interestingly, the management of the PBPA was assigned to the Urban Development Corporation (UDC) and not to the National Environment Protection Agency (NEPA). This observation is made by Roper (2013): “Fortunately or unfortunately, the management of the PBPA has been given to the Urban Development Corporation (UDC), so it is up to the UDC, and not NEPA, to determine appropriate uses for the PBPA.” It goes without saying that it perhaps reasonable to expect that it is far more likely that

choices would be made along economic lines than environmental lines when it matters most. As is quite obvious, the crossroad of environmental protection and economic development is one that is highly polarized with far reaching implications. The best approach then cannot be one of a shouting match or polarized groups taking pot shots at each other. There has to be honest and collaborative dialogue, fuelled by research and a desire to explore options. Roper (2013) holds the view that the original designation of the PBPA was too expansive.

He states, “I have maintained from the very outset that the 1999 decision was one-sided in that a narrow band of environmentalists and a privileged few dominated the conversation, and this resulted in economic options being foreclosed pre-emptorily. The designated area ought not to have been so large. Jamaica is confining itself to perpetual poverty by foreclosing the option for development for a full one-eighth of its development space.” It is my considered opinion that there is no *ipso facto* conflict between development and environmental sustainability. There should be a methodology of careful planning, dialogue and a commitment to balance that that can be pursued. In the case of the conflict that arose over the proposed Goat Islands project Roper (2013) posits a similar view:

Jamaica needs this particular investment at this time. Time is of the essence because of all the development in the Panama Canal and the opportunities to participate in global maritime that are implied by the 2015 Panamax. Therefore, I am recommending to the minister of transport, housing and works, Dr Omar Davies, that he take a proactive, rather than tentative, approach “to this development. I think that consultation needs to begin immediately in which the message of what is planned in the wake of this investment by the Chinese to

town hall meetings to get buy-in by the Jamaican people. Their good sense will prevail (Ibid.).

In the midst of the raging debate one example of research and presentation of options stood out, the work of Bruner, Magnan, Rice and Ried (2014):

The report on the Goat Islands project focuses on one of several fundamental questions that need to be assessed in order for Jamaicans to make an informed decision: Are there suitable alternative sites that would reduce environmental and social risk to Jamaica without imposing undue financial costs on the developer? If such sites exist, Jamaica could avoid significant social and environmental costs and risks to the nation, without diminishing the business case for the new port. (Ibid., 11). . . . This report assesses whether there are suitable alternative sites that could promote both objectives without imposing undue financial costs on the developer. Our findings show that there appears to be at least one such option: an equivalent facility at Macarry Bay, to the west of Goat Islands, would cost an estimated \$200 million less to build. Considering a planned total investment of \$1.5 billion, this represents a potential cost savings of more than 10%. Building at Macarry Bay would also impose a far smaller environmental cost. (Ibid., 22)

Bruner, Magnan, Rice and Reid (2014), raise two important questions in their proposal for the alternative site which I think could form the basis of a template for resolving similarly vexing dilemmas: (1) “What is the value of the environmental services and associated livelihoods that may be put at risk through development around Goat Island ,and how does this value compare to values at alternative

sites?” (2) Beyond immediate environmental and social impact, what negative consequences can Jamaica expect from building on Goat Islands as compared to alternative sites? (Ibid., 22).

Gullies: From the Ridge to the Reef.

Roper (2013) argues that there is a strong link between poverty and environmental destruction. He argues that “Poverty is the greatest threat to the environment.” The case in point of the gullies in this paper is similarly indicative of poverty, a poverty of economic and mental proportions. I speak specifically of the squatter settlements along the banks of the gullies in Jamaica. The persons who dwell there have no land ownership, typically have illegal water and power connections and in many instances either have no sanitary bathroom facilities or where those are constructed the effluent is released directly into the gully. Solid waste from these settlers are predominantly dumped into the gullies.

There is a view among the residents in such places that the garbage trucks do not come into their communities often enough to collect the solid waste. I can personally attest to this in one such community in particular. On the other hand, though it needs to be said that even when the garbage collection occurs more frequently many residents along the gully banks simply find it more convenient to throw their garbage into the gully. We need to ask ourselves whether there are any vested interests in keeping such squatter settlements operational. Likewise we need to ask ourselves what factors determine the inequitable distribution of garbage trucks across the city. The solid waste from the gullies make their way to the Kingston harbor and outer waters.

Information gathered from the Mananuca Environmental Society indicates, “Plastic bags breakdown in 50 years, plastic bottles in 150 years, and cigarette butts in 75 years, paper in 1 year and batteries in 200 years. These all take so much time to breakdown to the detriment of creatures that live around us. If a turtle encounters a plastic bag, which looks similar to jellyfish, he may swallow the plastic bag and choke on it. Batteries leak poisons as they breakdown and can contaminate the fish we eat, as well as kill corals and other marine life.”

There are further threats associated with plastics in the oceans. According a report in The Guardian Newspaper by Milman (2015), “Pieces are ingested by fish and then travel up the food chain, all the way to humans. It is expected this problem will worsen due to the rise of throwaway plastic, such as drinks [sic] containers and food packaging, with only 5% of the world’s plastic recycled at present.” Milman (2015) also quotes Dr. Hoogenboom: “In my opinion we need a general focus on cleaning up plastic pollution, to clean up beaches and reduce the amount of plastics in the waterways and into the oceans. It’s a significant problem globally.”

The phrase ‘from the ridge to the reef’ was used by Roper (2015) to describe the interconnection between what happens inland and what happens to the corals. In this paper it is what happens in the gullies that is in view. At the local level, Martin Henry, Communications Specialist with the Scientific Research Council of Jamaica, speaks to the importance of our coral reefs.

The highly productive coral reefs provide significant benefits to the human population. The reefs are sources of food. They are a major source of sand as they erode. As buffers, they provide protection to coastlines from waves and currents.

The reefs are important to the Jamaican tourism product as a source of sand in the sun, sand and sea formula. There is increasing interest in reef species as sources of biologically active compounds for medical drugs.

Henry describes as well the role that algae play in destroying corals: “The growth of large algae, if not kept in check, smother existing coral and prevent coral larvae from settling to form new colonies. The algae are kept under control by herbivorous organisms which graze on them. The parrot fish, a Jamaican dinner delicacy, is one of the most important grazers, and over-fishing of parrot and other reef species allows the algae to flourish. The raw sewage from gully bank residents makes its way to the sea, creating a nutrient rich environment for algae to grow.

Martin sheds more light on the inherent danger of this reality. “Peter Edwards and Tatum Fisher identify sewage and agricultural fertilizers as the major sources of nutrient-supplying pollution affecting coral reefs. Additional nutrients mean additional growth. According to the S&T Conference paper, ‘a striking ... shift has taken place from a coral-dominated system to one dominated by algae.’ Algal cover has grown from four per cent to 92 per cent.” Martin (Ibid.).

This gloomy picture is supported by a report from the National Environment and Planning Agency (NEPA) in 2008. The report indicates that “The influence of natural and man-induced stressors on coastal ecosystems has in most cases resulted in a switch from coral to algal dominated reefs. These stressors have resulted in a decline in coral cover from a high of 50% in the 1970s to less than 5% by the early 1990s.

A Caribbean Theology of the environment

Dr. Rolf Hille, chairman in 2004, of the Theological Commission of the World Evangelical Alliance expressed the view that “Environmental questions have become real-life questions for humanity.” This opinion was expressed in his foreword for Gnanakan’s book *Responsible Stewardship of God’s Creation*. (Gnanakan, 2004, 5). Hille continues his foreword making salient observations such as, “God created this world with great love and perfection and commanded man ‘to work the garden and preserve it (take care of it)’... It does therefore, matter to God, how we handle His creation, water, air, raw materials, soil, animals and plants. When a theologian takes a careful look at the ideas behind ecology and when Christian churches become concerned about the environment, then this is not simply a favorite hobby... Rather how we deal with the creation is also essentially a matter of being a faithful disciple of Jesus and obedient faith.”

According to Weaver and Hodson, “When the concerns about the environment began to emerge, two people related it to the Church: Dr Lynn White [who] attacked the Judaeo/Christian tradition for having taken the notion of ‘dominion’ to mean liberty to take from nature whatever and whenever we please [and] Francis Schaeffer, on the other hand, [who] expounded the theory that the local church should be the ‘pilot plant’ setting before human society a picture of the way life was meant to be.”

Taylor (2014) argues with conviction that the Wisdom Literature calls us to the sustainability of the creation. He writes, “there is a growing note of urgency presently, about the subject, to the extent that it is not unusual for the language of crisis to be associated with it. There is often reference to the pending or actual environmental or ecological crisis faced by the world in general and more so in some places in particular for varying reasons.” (Taylor 2014, 140).

Further negligence towards these matters and basking in the bliss of ignorance are luxuries that the Jamaican church can no longer afford.

I am an ardent advocate for Caribbean Theology. So in this section we will make a case for the inclusion of a theology of the environment in the discourse of Caribbean Theology as a necessity. The words of Francis Schaffer offer some opening pointers in this regard, "If God treats the tree like a tree, the machine like a machine, the man like a man, shouldn't I, as a fellow-creature, do the same -- treating each thing in integrity in its own order? And for the highest reason: because I love God -- I love the One who has made it! Loving the Lover who has made it, I have respect for the thing He has made."⁴ Along a similar vein he makes a compelling case for respect for the environment to be an intrinsic part of the life of a Christian:

The tree in the field is to be treated with respect. It is not to be romanticized as the old lady romanticizes her cat (that is, she reads human reactions into it). But while we should not romanticize the tree, we must realize that God made it and it deserves respect because he made it *as a tree*. Christians who do not believe in the complete evolutionary scale have reason to respect nature as the total evolutionist never can, because we believe that God made these things specifically in their own areas. So if we are going to argue against evolutionists intellectually, we should show the results of our beliefs in our attitudes.

⁴ Francis A. Schaeffer, *Pollution and the Death of Man*, Ch. 4:
<http://www.rationalpi.com/theshelter/ecology.html>.

The Christian is a man [or woman] who has a reason for dealing with each created thing on a high level of respect. (<http://www.goodreads.com/work/quotes/443980-pollution-and-the-death-of-man>).

In stating his case for a Caribbean creation theology, J. Richard Middleton firstly identifies what I think is the fundamental cause of the absence of this kind of “think and talk” on environmental concerns in our churches. He posits, “the indelible human footprint on the natural beauty of the Caribbean (our impact on the earth), combined with horrendous natural disasters (the earth’s impact on us), gives the lie to any romantic vision of what we moderns have come to know as ‘nature’ (the realm of the non-human); but it also calls into question the sort of popular piety we find in the Caribbean church that imagines a separation between human ‘salvation’ (narrowly conceived) and our earthly environment. Paradoxically, among many Christians, in the Caribbean and elsewhere, we find a decidedly otherworldly, and often individualistic view of ‘salvation’ as the saving of souls from a fiery judgment to an eternity with God in the ethereal heaven, combined with a romantic view of nature as a special place to encounter God.... Yet little if no thought is typically given to the possible connection – or better, to the disconnect- between an otherworldly salvation and a romanticized nature.” (Ibid, 79 – 80).⁵

Middleton pushes further with this when he recognizes that there seems to be an inherent lack of interest on the part of Caribbean theologians in what he refers to as creation theology. He states that

⁵ See also his full-scale treatment of ‘heavenly matters for our earthly good’ in *A New Heaven and a New Earth: Reclaiming Biblical Eschatology*. Grand Rapids: Baker, 2014.

“Caribbean theologians are right to express suspicions about any points of view that is [sic] blind to the reality of social inequalities, especially if this blindness is combined with a romantic view of nature.... Given the pressing human needs that face Caribbean people every day it might seem that a theology of creation would take away our focus off what is undeniably of prime importance.”

“There is also”, argues Middleton a “historical reason for the suspicion of creation as a theological topic . . . either to prioritize a concern for human flourishing over a concern for the earth, or to view creation theology with outright suspicion.” (Ibid., 81).

Having set out the status quo here in Jamaica it is my hope that the eyes of the church would be open to see the obvious, that if we continue to only sing a “Sankey” there may be no land left for us to stand on to do our singing. It is further hoped that Caribbean theologians would recognize that, as Middleton says, “this anthropocentric focus, which separates human well-being from concern about the earth, is an artificial polarization, since people only exist, live and work somewhere; that is, any socio-cultural analysis would show that people both impact and are impacted by their environment.” (Ibid. 82). Such an artificial and polarized view is not supported by Scripture either, as I have earlier shown. Middleton supports the opposite position: “It is an artificial polarization from a biblical point of view as well, since humans are consistently understood in the Scriptures as part of the wider cosmos, which is not only created by God, but is the object of God’s saving activity.” (Ibid., 83).

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