# **Sustainable Development - Climate Change’s Antidote**

By Debbie-Ann Ashby

“Our biggest challenge in this new century is to take an idea that seems abstract – sustainable development – and turn it into a reality for all the world’s people”.[[1]](#footnote-1) Sustainable development refers to advancement that fulfils our present needs, without reducing the ability of forth-coming generations to do the same. This is achieved through a tri-fold approach that intertwines social, environmental and economic considerations. Through sustainable development, sustainability can be achieved. Sustainability is defined as a future paradigm in which the Earth's biosphere and humanity co-exist. The notion of sustainable development was introduced by the United Nations World Commission on Environment and Development in “The Brundtland Report”.[[2]](#footnote-2) Thirty years later, this concept is still a ‘hot topic’ invoking discussions globally on a middle ground that reconciles environmental conservation and human development. As such, the United Nations General Assembly developed seventeen (17) Sustainable Development Goals (SDGs) in 2015 that are expected to be accomplished by 2030.[[3]](#footnote-3) In my humble opinion, sustainable development is of crucial importance due to its tri-fold approach, which provides environmental protection and conservation, basic human needs and of course, global economic growth; all in a long-term manner. These advantages will, in turn, assist the Caribbean in addressing the challenges posed by climate change.

Firstly, sustainable development is important in achieving environmental protection and conservation through its focus on renewable energy resources, organic farming techniques and biodiversity. Unlike non-renewable energy, such as oil, gas and coal, renewable energy is environmentally friendly and nondepletable, hence it can be sustained for future generations to utilize as well. By using renewable energy sources such as wind, solar and wave energy, humankind can eventually decarbonize and reinstitute a natural symbiotic order, where greenhouse gas (GHG) emissions linger around net zero. This will mitigate climate change since non-renewable energy, which is associated with the emission of GHGs, drives climate change and global warming. Additionally, crop rotation is a sustainable and organic agricultural practice that involves growing different crops on a particular piece of land, in succession. This conserves soil integrity and provides disease control, thereby reducing the need for fertilizers and pesticides to feed the growing population. Mixed farming, which involves simultaneously planting crops and rearing livestock, is equally effective. For instance, in Europe, farmers used crop rotation and mixed farming to successfully reduce the need for fallowing, while the manure directly improved soil fertility[[4]](#footnote-4). Biodiversity, the variability among and between organisms, species and ecosystems, stands at the heart of sustainable development. Hence, several SDGs support biodiversity, including SDG 14 – “life below water”, and SDG 15 – “life on land”.[[5]](#footnote-5) Unsustainable practices, like overconsumption, overfishing and water wastage neither protect, nor conserve earthly and marine food webs and food chains. This leads to endangered and extinct varieties of flora and fauna. For example, harmful pesticides, which are associated with unsustainable agriculture, weaken bees and without bees, approximately 50% of the food in groceries would disappear.[[6]](#footnote-6) Therefore, sustainable development plays a significant role in preserving and protecting the environment by reducing greenhouse gas emissions and sustaining food production and biodiversity.

Secondly, sustainable development is important in supplying basic human needs, such as food, water and shelter on a long-term basis, despite the rising global population. Food security is fostered through sustainable agricultural practices, such as crop rotation and mixed farming, in addition to restoring degraded lands, reforestation, improved irrigation and the development of resilient crop varieties. SDG 2 aims to accomplish zero hunger by doubling agricultural productivity, which will create adequate quantities of safe and nutritious food year-round for future generations.[[7]](#footnote-7) Healthy diets and lifestyles are closely connected to the eradication of non-communicable diseases in developing countries like Caribbean nations, as well as developed countries. Moreover, sustainable development encompasses activities like desalination, water harvesting, wastewater treatment and reuse technologies. This protects water resources in the long run by minimizing water pollution and water wastage. After all, everyone has a right to food, health and water. In terms of shelter, unsustainable practices involve utilizing non-renewable resources to construct and power homes. As these resources deplete, they will get more expensive, making it difficult for many people to own a home and maintain one in the future. Instead, sustainability embraces green cities and homes that are powered by renewable energy, both of which are infinite. Another SDG, SDG 13, prioritizes action on climate change. Climate change causes droughts, famine, diseases and natural disasters. Droughts affect access to water resources, famine impacts food security, diseases lower human health and well-being, while natural disasters demolish houses and settlements. As a result, sustainable development is pivotal in providing basic human needs, so that the present, and future generations can survive and thrive.

Thirdly, sustainable development is important in accomplishing global economic growth, even in an industrialized world. Sustainable development practices allow developing nations, especially those without access to fossil fuels, to utilize renewable energies to power their country. This results in a more equitable manner of development globally. Also, through the research, development, implementation and maintenance of renewable energy technologies, long-term sustainable jobs will be created, instead of the finite jobs produced by fossil fuel technologies. In a similar vein, SDG 8 aims to attain “decent work and economic growth” through full-time and fair paying employment for all women, men and differently-abled people by 2030, while eliminating forced labour, child labour and modern-day slavery.[[8]](#footnote-8) Economies dependent on unsustainable energy sources will ultimately crash when these resources become obsolete. In fact, at current combustion rates, fossil fuels are expected to finish by 2060.[[9]](#footnote-9) What will we do when this happens? As such, we ought to commence the phasing out of non-renewables, in favour of renewables, which can be used forever, for optimal economic longevity. In addition, developing countries can eradicate poverty by harnessing free energy because natural resources like wind and sunlight are abundant and free, as opposed to costly fossil fuels, which are unaffordable to lower economic societal segments. Moreover, companies that employ a sustainable business model and focus on the triple bottom line - people, planet and profits - have observed increased profits and savings. For example, in 2016, Ikea saved US$1 million by recycling waste into their products[[10]](#footnote-10). Furthermore, market research from various sources revealed that consumers are willing to pay more to purchase goods from companies that support the triple bottom line. Therefore, sustainable development is necessary to forge more financially feasible and long-lasting economies worldwide.

“No challenge poses a greater threat to future generations than climate change.”[[11]](#footnote-11) However, sustainable development will undoubtedly assist the Caribbean in addressing the challenges associated with climate change, including adaptation mechanisms, global warming, food and water shortages and a decline in tourism. This will be accomplished by adhering to each and every SDG, all of which are intended to be accomplished by 2030.

Firstly, it is difficult for the Caribbean to adapt to climate change, hence sustainable development, the antidote to climate change, is necessary. Although the Caribbean produces minimal GHG emissions, it is still extremely vulnerable to the effects of climate change. All Caribbean nations are developing nations and their limited budgets cannot facilitate cumulative disaster recovery costs and adaptive infrastructure. Adaptative measures to deal with climate change include constructing seawalls, flood barriers, early warning systems for natural disasters and drought-resistant crops etc. Sustainable development fights the root cause of climate change – GHG emissions, thereby eventually reducing the need for adaptive measures. It achieves global GHG reductions by encouraging renewable energy and global collaboration. Luckily, the Caribbean has excellent prospects for exploiting solar, wind, geothermal and hydroelectric energy since those natural resources are abundant in the region. At present, renewable energies are widely used in only a few Caribbean nations, like Belize, Aruba and Guadeloupe.[[12]](#footnote-12) Furthermore, sustainable development fosters global collaborative efforts to mitigate climate change. SDG 17 - “Partnerships for the Goals” emphasizes international support for developing countries in finance, technology and trade.[[13]](#footnote-13) Therefore, affording adaptative mechanisms, a major challenge posed by climate change on the Caribbean, can be addressed by utilizing renewable energy sources and global collaboration, which are major facets of sustainable development.

Another challenge that climate change presents is global warming. Through the greenhouse effect, the Caribbean is warming hastily! This warmth melts polar ice caps, which results in sea level rise and, in turn, coastal erosion. The coasts of several Caribbean territories, including Jamaica, Bahamas and Barbados are eroding and this is worrying since these coasts are laden with infrastructure, ports and tourist attractions. Sustainable development limits global warming through SDG 7 – “affordable and clean energy”, and SDG 13 – “climate action”.[[14]](#footnote-14) Also, the Paris Agreement, which all CARICOM nations have signed, aims to limit global warming to preferably 1.5°C higher than pre-industrial levels during this century.[[15]](#footnote-15) A global temperature rise beyond 1.5°C will amplify heat waves, forest fires, pest invasions, hurricanes and coral bleaching throughout the Caribbean. By limiting global temperature rise through sustainable development, small island developing states (SIDS) can allocate their scarce resources to sustained economic development, instead of the recovery costs associated with climate change. In short, sustainable development is intertwined with the reduction of global warming through SDGs 7 and 13, which in turn lessens the impact of climate change on the region.

In addition, food and water shortages are a major challenge posed by climate change. Climate change results in soil aridity, droughts, flooding and natural disasters, all of which impact food security as they reduce agricultural productivity. It is estimated that 6.6 million Caribbean residents will live in hunger by 2030.[[16]](#footnote-16) This places emphasis on achieving SDG 2 which aims to end hunger by 2030 by promoting food security, nutrition and sustainable agricultural practices. Moreover, inequalities related to gender, income, and access to food and productive agricultural land, negatively affect food security. Fortunately, SDG 5 and SDG 10 address these issues by diminishing gender-based and other inequalities through income growth, equal opportunity and financial assistance. Additionally, sustainable development will lessen water shortages. Due to climate change, access to water is restricted by drought, increased evaporation and the saltwater intrusion of freshwater stores. To combat this, sustainable development adopts practices like ecosystem restoration, river protection, water sanitation and eliminating water pollution to promote long-term water security. Hence, sustainable development offers a feasible solution to battle the regional challenge of food and water scarcity, which is initiated by climate change.

Lastly, sustainable development can reinvigorate the Caribbean’s tourism sector. Climate change has caused coastal erosion, destroyed beach-front houses and bleached corals, which have begun to scare some tourists away from the Caribbean. Thankfully, sustainable tourism exists. It is defined as tourism that minimizes its negative social, economic and environmental impacts, such as eco-tourism and soft tourism. Sustainable tourism promotes the optimal use of environmental resources, while preserving biodiversity. Additionally, sustainable development reduces coastal degradation and sea level rise due to its focus on reducing climate change. This will ensure that our sandy beaches and colourful coral reefs offer a picturesque view under the warmth of the sun for generations to come. This will preserve the livelihoods of several citizens dependent on tourism such as travel agents, hoteliers and tour guides. Also, the economies of countries dependent on tourism such as Antigua and Barbuda, Belize and Cuba will be able to survive in the long term. As such, sustainable tourism and sustainable development will mitigate the challenge of reduced regional tourism, which is induced by climate change.

In conclusion, sustainable development, a very important concept, has been gaining a lot of traction lately. Sustainable development achieves the following in a long-term way: environmental protection and conservation, basic human needs and global economic growth. Also, through adaptive mechanisms, sustainable development will assist the Caribbean in dealing with challenges posed by climate change, global warming, food and water insufficiency and a vulnerable tourism sector. This will be accomplished by strictly abiding by the SDGs and the Paris Agreement, using renewable energy sources and by practising sustainable tourism. Together, the Caribbean can collaborate to do its part in enforcing sustainable development and addressing the impacts of climate change.

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