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# POLICY





## Advancing Sustainable Natural Resource Policy in the Caribbean.

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### INTRODUCTION

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Natural resources in the Caribbean are critical for human well-being. The ecosystem services that they deliver are the source of a variety of social and economic benefits to people, including those associated with the provision of food and materials, the regulation of nutrients, waste and water, opportunities for recreation, culture and aesthetic beauty, and protection from natural hazards. Nature-based tourism and natural resource extraction are critical but volatile sources of economic activity in the Caribbean<sup>[1][2]</sup>, providing employment, income and foreign exchange.

Natural resource policy in the Caribbean must strike a delicate balance. On one hand, there is a need to exploit the land, forests, air, water and oceans for economic growth and development. The short-term needs for income, employment and food security in the Caribbean have been heightened by the region's slow recovery from the global financial crisis, mounting debt burdens and impacts from natural disasters.<sup>[3]</sup> On the other hand, is the need to maintain the quality and integrity of the natural environment so that it will continue to deliver valuable goods and services to current and future generations.

The development of coastal lands to support tourism provides an example. Coastal tourism is a vital source of employment and foreign exchange for many countries in the region. Yet the loss of environmental quality that accompanies coastal development creates social and economic costs in terms of heightened risk from natural disasters, dilution of culture, loss of access, and potential deleterious impacts on the

tourism product itself. Fisheries provide another salient illustration of the challenging tradeoffs facing policy makers. The extraction of marine resources provides an essential source of food security, culture and livelihoods. Yet, this exploitation can lead to loss of ecosystem resiliency and lower potential future harvests, jeopardizing these socioeconomic benefits.<sup>[4]</sup>

Only when the costs of resource damage are weighed against the benefits of extraction and use, can the proper balance be achieved with policy. Put another way, the benefits of environmental protection and maintenance of ecosystem services must be measured and compared to the costs of reduced extraction and use. As simple as these concepts are at the surface, a close look at environmental conditions in the region suggests that we have a long way to go. The natural resource assets of the Caribbean are under constant threat from a variety of sources including pollution, land conversion, over-fishing, coastal development, runoff and sedimentation of reefs, and climate-related impacts such as warmer sea surface temperatures, increased storm intensity, and sea level rise.<sup>[4]</sup>

#### Market Failure

The cause of our collective shortcomings in properly managing these critical resources is no mystery: without policy intervention, market-based economies will fail to provide the quantity and quality of natural resources that are best for society. Unlike other goods and services, a majority of the benefits provided by the natural environment are "hidden" from view because they are not revealed in clearly observable market



outcomes. The relative absence of market signals regarding the value of environmental benefits and the costs of degradation results in readily observed market values carrying more weight in the policy process. Further, the benefits derived from ecosystem services are often shared across society, and cannot be packaged and made available to buyers. Because people are generally unwilling to pay for things when the benefits are shared and because businesses cannot survive without profit, these characteristics eliminate the incentives that drive markets to mutually beneficial outcomes.

This outcome is both understandable and unfortunate. Because we lack formal measures of the contribution of natural resources to human wellbeing, it is understandable that policy makers give them limited attention and treatment. Given the long-term nature of environmental change, the results-based incentives provided by short-term political cycles, and the tendency (especially in difficult economic times) to heavily discount the future, it makes sense that policy makers and the general public respond to immediate wants and needs. The unfortunate result of this imbalance is the long-term decline in the natural resource assets that sustain our health, wellbeing and economic prosperity.

While the idea of market failure is not unique to the Caribbean, it is clear that policy makers in the region have a unique set of challenges in correcting it. These include poor governance, lack of resources and capacity, overlapping and competing institutional arrangements and a regional heterogeneity that includes numerous Small Island Developing States (SIDS) and large continental countries that often have different goals, needs and capacities.<sup>[5]</sup> The Caribbean region's inherent dependence on natural resources and ecosystem services also creates a unique vulnerability which directly threatens economic growth and development<sup>[2]</sup> making effective conservation policy all the more critical.

### How Can Our Research Advance Policy in the Caribbean region?

First, we can do a better job at connecting our research to policy outcomes and directives. Academic researchers often produce only vague visions of a sustainable future without connections to clearly defined policy actions that will move us forward.<sup>[5]</sup> Because people, businesses and governments are more likely to adopt sustainable practices if it is in their best interest to do so, we should present our findings in a way that is easily understood outside of the scientific community in terms of how and why the use of natural resources is linked to the wellbeing of Caribbean people. Monetary values are an obvious metric that can serve to illustrate the hidden benefits of protection and the costs of degradation in a way that informs policy and raises general awareness. We also should strive to connect our research to non-monetary outcome measures such as food security, employment, risk reduction, human health, happiness and cultural identity. Connections to human values and outcomes should be bolstered by actionable recommendations that illustrate how the imbalance between market and non-market outcomes can be remedied, particularly as it relates to the acquisition and channeling of resources toward sustainability efforts.

Another important step is to involve local stakeholders in our research at all levels from the inception stage (i.e. formulation of the research question) to the communication of results.<sup>[6]</sup> Involving local policy-makers, resource managers and other stakeholders in the research process, will make results more understandable, defensible and actionable, and will enhance on-the-ground capacity for continued study and dialogue regarding the tradeoffs required to advance ecological and economic sustainability.<sup>[7]</sup>

These efforts will likely require that we move out of our discipline-specific comfort zones and into



interdisciplinary teams. While it is well understood that no single discipline can solve natural resource management issues, most researchers are trained and conversant only in the language, methods and assumptions of their particular discipline. Branching out into other disciplines will help us understand where synergies lie that can be effective at persuading policy makers.

For example, as a natural resource economist who focuses on the value of environmental quality, I can present a compelling argument that many Caribbean economies depend on tourism and that tourism depends, in large part, on environmental quality.<sup>[8]</sup> Coastal ecologists understand that natural shoreline features such as reefs, seagrasses and mangroves provide resilience and protection from storms and rising sea level.<sup>[9]</sup> Fisheries scientists understand that the loss of nearshore habitats are key threats to fisheries productivity and sustainability.<sup>[4]</sup> Combining these strands of research reveals the potential for environmental policy to advance human wellbeing in numerous ways. The environmental characteristics that attract tourists and their foreign exchange also serve to mitigate risks associated with climate change and improve the viability of nearshore fisheries.

Similar synergies certainly exist with regard to water, waste management, renewable energy and sustainable agriculture. Finding and illustrating these crosscutting areas where social, environmental and economic sustainability are inexorably linked will help to mainstream environmental policy such that it will be addressed not only by NGOs and ministries with direct connections to the environment, but also by more politically powerful entities such as ministries of finance, planning and development<sup>[10]</sup>, and may help to permanently incorporate environmental protection into national development

## Conclusion

Effective resource policy can promote the triple bottom line of sustainable development, facilitating economic growth, advancing social well-being and protecting the environment.<sup>[2]</sup> Policy makers in the Caribbean have a unique set of challenges in reaching this end. Yet, without effective policy intervention, market forces will continue to deliver suboptimal environmental outcomes. To improve the policy impact of our research we must present convincing arguments that investments in the conservation of natural resource assets are worth the costs of deviating from the business as usual approach. This will require that we clearly illustrate the linkages between the economic and social wellbeing of Caribbean people and the quality of our natural environment. By involving stakeholders, seeking interdisciplinary connections and providing actionable recommendations our research efforts can advance the triple bottom line.



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