

**NATURAL HAZARDS, PHYSICAL PLANNING AND CARIBBEAN  
COASTAL TOURISM: A CASE STUDY OF GRAND ANSE, GRENADA**

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**Abstract**

Tourism remains the main engine of economic growth for many Caribbean Small Island-Developing States (SIDS). The National Oceanic and Atmospheric Administration (NOAA) (2002) reports that tourism, particularly coastal tourism, is now the region's largest growth industry. The physical development of the tourism sector is an integral part of the economic development of many islands. Yet, Caribbean governments have long grappled with the sustainable planning and development of this vital industry. They have been particularly weak in planning for physical tourism development that is environmentally sustainable in the context of the Caribbean coastal zone. This paper seeks to make a contribution to the discussion by investigating the role of physical planning in the coastal tourism reconstruction process in the main coastal tourism belt of Grand Anse, Grenada in the wake of the passage of Hurricane Ivan in September 2004. The results of this case study demonstrate the importance of establishing a framework for 'development' represented in a rational physical planning process that makes use of both command-and-control and market-based instruments. However, the physical planning system has been undermined by a lack of forward planning for post-disaster recovery and reconstruction; limited institutional synergy and ability; a myopic approach to development in the coastal zone; and a disconnect in public-private sector collaboration in the context of reconstruction. These shortcomings in present planning practice have serious implications for the vulnerability, resilience and sustainability of the built coastal tourism environment.

**The Study**

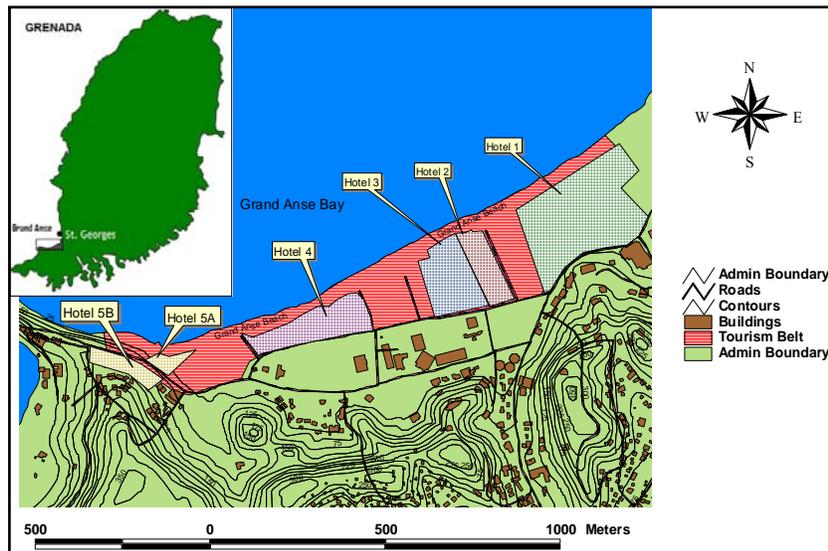
This study takes the form of a qualitative review of the key aspects relating to the difficulties and successes of the tourism reconstruction process in the main coastal tourism belt of Grand Anse, Grenada. The research has benefited from a desk study of available technical, business, and related government and private sector policy papers; semi-structured individual interviews with key tourism and physical planning stakeholders; and site visits. The researcher conducted the primary fieldwork for this study in Grenada from April 10<sup>th</sup> to May 10<sup>th</sup>, 2007.

**Coastal Tourism in Grand Anse, Grenada**

The territory of Grenada consists of three islands - Grenada, Carriacou and Petite Martinique - together with a number of smaller islets and rocks which lie offshore from those islands. The largest island, Grenada, has an area of 312 sq.

km. and is located in the Caribbean Sea between latitudes 11°59' and 12°20' North and longitudes 61°36' and 61°48' West.

Tourism (along with agriculture) is the economic pillar of development in Grenada with the island being ranked twentieth (20<sup>th</sup>) among the world's most tourism intense countries (Thomas, 2006). Not surprisingly, a significant part of Grenada's wealth is invested in its built tourism environment. The five (5) coastal hotels located in Grenada's main tourism belt of Grand Anse situated in the Southwest section of the island (See Map 1) are valued in excess of EC\$ 77,000,000 (Valuation Division, Ministry of Finance estimate, 2001) and collectively represent approximately 31% of the island's total room stock (where total room stock amounts to 1583 rooms). The island's largest coastal resort (Hotel 1); one of the island's foremost five (5) star properties (Hotel 4); and Grenada's only Green Globe Benchmarked properties (Hotels 5 and 4 respectively) are all located in Grand Anse.



Map 1. Five (5) Coastal Hotels in the Main Tourism Belt, Grand Anse, Grenada

### **Risk Due to the Siting of Tourism Facilities on the Coast**

Like many other Caribbean SIDS, progress in socio-economic development by way of tourism in Grenada has been marked by a concurrent increase in vulnerability in the spatial pattern of tourism development (NOAA/NOS, 2002 p. 7). Tourism development on Grand Anse is sited on the coast generally fifty (50) meters landward from the high water mark; within 300 metres of the shoreline and between four to ten (4-10) metres above sea level. The only exception to this rule of thumb is the accommodation segment of Hotel 5 (68

rooms) which due to topographic conditions is sited 25-100 meters above sea level.

Yet, the coastal zone is seen to be in the direct and immediate area of risk for the following reasons (Mahon, 2007):

- Hurricanes and tropical storms make landfall with all their force in this area and wind force is likely to be most destructive on the coast;
- Shear wind force acting on coastal waters throws up sea water on coastal land producing storm surge;
- Coastal waters meet the landmass in the coastal zone. During a hurricane, coastal water violently hitting the coastal land causes coastal erosion and loss of valuable beach;
- The coastal zone is the most low lying area in Caribbean SIDS and as a result is prone to coastal flooding due to runoff from mountains; and
- Tsunami impact is greatest closest to the shore as the coastal zone is the first zone for the impact of tsunamis.

#### **The Experience of Hurricane Ivan**

Hurricane Ivan struck Grenada on September 7<sup>th</sup>, 2004 as a major category 4 hurricane with winds of over 132 mph and is the first and only Category 4 hurricane to strike Grenada since 1856, and possibly in recorded history (Mahon, 2007). Hurricane Ivan qualified as a “direct hit,” having come within 11 kilometers south of Grenada. That event left in its wake “an overwhelming volume of evidence of how planning and investment decisions may contribute to vulnerability and the consequent risk of disasters” (World Bank, 2002, p. 2). Estimates for example reveal that approximately 50% of tourism assets of national importance were destroyed (OECS, 2004); while evidence from the five coastal hotels in the Grand Anse study area confirms that these structures too did not perform well. Approximately, eighty percent (80%) of the 496 rooms that were available before the passage of Hurricane Ivan sustained damage. Generally, major damage to the envelope of the tourism structures on Grand Anse was done by high winds or flying debris picked up by these winds which allowed rain and wind to penetrate and cause further damage and destruction.

Due to a lack of information, it is difficult to evaluate the cost of refurbishment and/or reconstruction for the five coastal hotels under survey. It is known that Hotels 1 and 2 remained open for business even immediately after the passage of Hurricane Ivan. Hotels 1 and 2 engaged in minor refurbishment; Hotels 3 and 5 engaged in major refurbishment; while Hotel 4 undertook a major demolition and reconstruction exercise involving nine beachfront chalets. At the time that this study was conducted, one hotel was still undergoing refurbishment.

#### **The Role of Physical Planning in Building Resilience against Coastal Hazards**

Professionals and academics alike recognize the merits of physical planning in building resilience against the impacts of natural hazards (Burby, 1998; American Planning Association (APA), 2005; Suite, 2006). From a physical planning perspective, planning for environmentally sound tourism facilities refers to the process that makes use of a multiplicity of legislation, policies, development planning standards as well as assessment tools to guide and influence planning and investment decisions in an effort to deliver a sound product in the form of environmentally resilient, built superstructure and infrastructure. Essentially, physical planning sets the foundation upon which every other activity follows as it assists in the selection of sites for buildings of specific structures and facilities; presents alternative sites; and works in tandem with engineering options which can mitigate potential damage (Suite, 2006).

### **Successes in the Physical Planning Process**

#### **The Framework for Development**

The Grenadian government has taken steps since the 1980s to legislate, change economic policies and set up institutions for the better management of the natural and built environment. For example, the Government of Grenada has endorsed the Caribbean region's Comprehensive Disaster Management Strategy; has established a standing National Hazard Mitigation Council to inform the work of the National Disaster Management Agency (NaDMA); as well as other government agencies that deal with mitigation issues (GOG, 2006: p. 6). More specifically, the PPU was established in 1982 with the principal mandate of guiding the orderly and progressive development of land in Grenada. In addition, the application of informed and consistent planning practices by the Planning Authority has been institutionalized through the use of a multiplicity of tools and guiding documents that altogether form part of the framework for development.

#### **A Rational Physical Planning Process**

The planning philosophy that underpins the review of tourism development proposals in Grenada emphasizes that should development be located in the hazardous coastal zone, it should be designed to minimize the effects of natural hazards. To this end, the Physical Planning Unit continues to use a range of tools in the weighing and approval of each tourism development proposal. Three of these are indispensable:

1. Environmental Impact Assessment (EIA) – Section 25 (2) of the Physical Planning and Development Control Act makes the conduct of an EIA mandatory for hotels in excess of 50 rooms; for development involving a marina; any coastal zone development, as well as any development in wetlands and other sensitive environmental areas (GOG, 2002). In practice, the EIA serves a two-fold purpose. It

investigates both the impact of the development on the environment as well as its reciprocal – the impact of the environment on the development. Since there can be highly localized variations in vulnerability to natural hazards, the EIA identifies environmental and climatic conditions associated with the site and requires that the developer put forward mitigation measures to reduce or prevent potential loss and/or damage as a result of external natural forces.

2. Physical planning standards – Perhaps the most cross-cutting planning standard applied to coastal development in Grenada is the requirement for all major buildings and facilities to adhere to a coastal development setback of 50 meters from the high-water mark, or 3 meters above sea level.
3. Grenada Building Code and Guidelines – The Grenada Building Code and Guidelines are multi-hazard in approach and serve to provide standard guidelines for the construction of buildings to ensure a minimum level of safety for the occupants. For example, all development if built according to the Code will withstand the impact of at least a Category 3 hurricane. Tourism development proposals must show evidence of compliance with the engineering standards prescribed in the Code and the adoption of mitigation measures that account for the climatic conditions explored in the EIA in order to gain physical planning approval.

### **The Use of Command-and-Control and Market-Based Instruments**

In the pre-Ivan context, the weighing and approval of the tourism development proposal in Grenada reflects an intended balance between the use of command-and-control instruments (usually State initiated and regulatory in nature) and market-based (incentive) instruments. The major public sector actors in this process are the Grenada Industrial Development Corporation (GIDC) and the Physical Planning Unit. A tourism developer wishing to undertake new development or an extension of existing facilities almost always seeks to do so in collaboration with the GIDC. This is because according to one official at the GIDC, with the introduction of concessions and incentive support as recommended by the GIDC, the reduction in the cost of development to tourism developers can be as much as forty percent (40%). However, since physical planning approval is a must for all new development, extensions to existing development as well as the change of use of any buildings or structures, all developers must first gain approval for development from the PPU in order to qualify for incentive support as recommended by the GIDC. This serves as a critical checkpoint in the tourism development process, prompting developers to undertake development projects within the established rational physical planning framework for development.

## **Difficulties in Physical Planning Practice**

### **A Lack of Forward Planning for Post-Disaster Recovery and Reconstruction**

At the macro level of national development planning in Grenada, a critical shortcoming of physical planning has been its failure to include a plan for recovery and reconstruction as an added element of the National Physical Development Plan. A failure to consider these issues at the macro level of the National Physical Development Plan, usually equates to a failure to do the same at the sectoral level of tourism. However, it is critical that the NPDP present as an added element of its design, post disaster recovery, reconstruction and/or redevelopment plans that serve as a possible way forward following the impact of different types of hazards, of different magnitudes, on a national and sectoral level.

### **Limited Institutional Synergy and Ability**

The Grenada case study has demonstrated the differential that exists between the prescriptive role and the actual ability of the National Planning Authority. The role of the Physical Planning Unit is extensive but its ability is limited. Likewise, while the relevant legislation, policies and plans that explicitly support the implementation of hazard mitigation measures or have the potential to do so may exist, the absence of a coherent institutional framework in the areas of content, administration and enforcement impacts negatively on the practice of planning with the inevitable result that intent is not matched by implementation.

### **A Myopic Approach to Development in the Coastal Zone**

The results of the case study suggest that the Grenadian government may still be grappling with streamlining the implementation of the rudimentary issues of location and structural design. In such a context, there is a tendency for wider and other substantial issues related to development in the hazard-prone coastal zone to be overlooked or ignored. Apart from locational and structural issues, three areas where physical planning can make a substantial contribution at the micro level of the developer in Grenada but has not include: (1) sensitive landscape design, (2) evacuation planning and design of tourism facilities; and (3) preventative maintenance.

### **A Disconnect in Public-Private Sector Collaboration in the Context of Reconstruction**

In the context of reconstruction, generally, it is hard to find any case in which any of the five coastal hotels did not benefit from State tax exemptions on the import of building materials and furniture for general refurbishment and reconstruction. Interestingly, it is harder still to find any case where State

incentives were given specifically to implement hazard mitigation measures in the refurbishment and reconstruction process; or as in the pre-Ivan context, the balanced use of command-and-control and market-based instruments to achieve environmental resiliency in the built tourism environment.

When asked whether advice or instruction was given by the National Planning Authority about the most appropriate way forward in rebuilding their coastal structures, many developers commented that this was generally not provided. Regardless, the evidence substantiates the view that the private tourism sector has been instrumental in significantly increasing its own hazard resilience. All coastal tourism developers have refurbished or rebuilt to a better standard in two ways: (1) coastal tourism structures are more resistant to the hazards associated with the passage of a high wind hurricane; and (2) the quality and range of the tourism product (facilities and ancillary services) being offered on Grand Anse has improved.

Although commendable, this approach is limited. Developers have generally used the refurbishment and reconstruction process to retrofit their structures against the most recent threat in memory (in the case of Hurricane Ivan, high wind hazard was the main cause of damage and destruction), instead of using the opportunity presented by refurbishment and reconstruction to retrofit their properties against the range of coastal hazards to which their properties are exposed. The influence of the National Planning Authority and other public sector stakeholders such as the Ministry of Tourism and the Grenada Hotel and Tourism Association may have had the effect of tilting the balance in the right direction towards retrofitting that is done more comprehensively and encompasses building resilience against a fuller range of coastal threats.

### **Conclusion**

The Grand Anse, Grenada case study demonstrates success in establishing a framework for 'development' represented in a rational physical planning process that makes use of both command-and-control and market-based instruments. However, the physical planning system has been undermined by a lack of forward planning for post-disaster recovery and reconstruction; limited institutional synergy and ability; a myopic approach to development in the coastal zone; and a disconnect in public-private sector collaboration in the context of reconstruction. These shortcomings in present planning practice have serious implications for the vulnerability, resilience and sustainability of the built coastal tourism environment.

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