

**ABSTRACT**

**THE ECONOMICS OF ADAPTATION TO CLIMATE CHANGE IN  
CARIBBEAN SIDS: lessons from the region's experience with hurricanes and  
implications for the sustainable development of the regional tourism industry**

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The main objective of the thesis is to evaluate the economic feasibility of ex ante adaptation strategies and policies to deal with the anticipated negative impacts of climate change on the Caribbean tourism industry.

Two (2) challenges to the sustainable development of the region's tourism can be identified – keeping tourism development within the socio-cultural and ecological carrying capacity of the region and, more importantly in the context of this research, the second related challenge of anticipating and adapting to the impacts of climate change on the Caribbean. The thesis begins with a justification for the selection of the tourism sector by summarising the economic significance of the tourism industry in Caribbean countries. The literature on climate change impacts in SIDS is then reviewed and it is recognised that climate change will have a significant effect on SIDS via impacts such as increases in mean sea level rise and in the intensity of hurricanes. This research is particularly concerned with the latter impact, and its likely socioeconomic consequences.

Data are presented on the socio-economic impacts that hurricanes have had on selected Caribbean tourist destinations and the thesis also reviews the anticipated negative impact on the tourism industry that could arise if predicted climate change impacts are realised. Specifically, the likely impact of climate change on the coastal zone is explored.

The thesis goes on to provide data on the amount of funding countries have spent financing for rehabilitation after the passage of hurricanes and, where available, data on anticipatory adaptation measures are also presented.

A case study of tourism in Antigua and Barbuda is presented to show how risk management techniques via insurance premiums coupled with risk reduction measures such as design and construction stipulations and/or retrofitting, can reduce the risk associated with hurricanes and by extension, climate-change related natural hazards. Data on the use of flexible insurance premiums to encourage anticipatory adaptation to the impacts of natural events, especially hurricanes in Antigua, are highlighted and a methodology extrapolated from these data to show the potential benefits that would accrue to the Antigua tourism sector if retrofit and/or design measures were implemented to reduce the potential negative impacts of hurricanes on that sector. The conclusion drawn from the Antigua and Barbuda case study is that the available evidence suggests that investing in anticipatory adaptation could be more cost effective than reactionary adaptation. Further, anticipatory adaptation could facilitate the sustainable development of Antigua's tourism industry, which would ultimately redound to that island's economic development.

Five (5) broad conclusions and five (5) specific policy recommendations are drawn from the thesis for the sustainable development of the region's tourism industry given the challenges posed by climate change impacts, particularly hurricanes. The specific recommendations include (i) the need for a multidisciplinary approach to dealing with the anticipated impacts of climate change related windstorm events on the sustainable development of Caribbean SIDS; (ii) the view that sub-regional approaches or an overall regional approach could be most effective in crafting and implementing adaptation strategies to deal with climate change impacts; (iii) the linking risk management techniques via insurance premiums with risk reduction measures (such as design and construction stipulations and or retrofitting with natural hazards in mind) to

provide an incentive for risk reduction measures to be taken by property owners. Related to this, insurance companies should be encouraged to provide catastrophe risk to residential and commercial property owners; (iv) the use of economic and financial policy instruments to encourage anticipatory adaptation; and (v) regional and international agencies, such as the CDB and USAID, could influence national and regional approaches to anticipatory adaptation via the incorporation of adaptation/risk management/risk reduction measures into their loan/grant qualifying criteria.

**Key words :** Marlene Attzs; Climate Change; Risk Reduction; Risk Management; Anticipatory Adaptation; Caribbean Tourism; Antigua.