

Climate Change Risk Management Options for the Tourism Sector

Introduction

The Latin America and Caribbean (LAC) region has a long history of coping with natural hazards such as hurricanes, floods, and coastal storm surges. However, climate change is expected to exacerbate the threat of natural hazards and pose new ones. As a result of climate change, average temperatures and sea levels are known to be rising, precipitation patterns might change, and hurricanes could intensify. Many of these changes are already occurring, and are projected to become more severe in the future.

The Inter-American Development Bank (IDB) supports a wide-range of projects in the LAC region. Climate change-related risks could adversely affect the financial, economic, environmental, and social performance of current and future IDB investments in the region. This factsheet identifies climate change risks and risk management options that can be incorporated into IDB-investments for the tourism sector.

These climate change risk management measures range widely in scope, scale and time frame. It is anticipated that the user will consider the applicability of these measures and refine based on



the project or region of interest. In general, it is recommended that all projects should include disaster preparedness measures, such as measures to issue timely and effective early warnings, evacuation and safety plans, and business continuity plans. A review of the insurance scheme is also recommended as a means to minimize post disaster losses. For new projects, selecting risk management measures during the feasibility and design phase can help avoid costly retrofits and maximize resilience to climate change impacts throughout the project life.

Climate Change Risk Management Options for the Tourism Sector

Climate Change Risk Management Options	How the Option Addresses Hazard	Relative Cost	Implementation Feasibility
Hazard and Impact to Sector Sea Level Rise Destruction of or damage to tourist structures and dependent structures (transportation, utilities, etc.) and loss of beach area to erosion			
Elevate structure(s)	Elevates and protects infrastructure from major impact	\$-\$\$	Easy to implement during design/construction; moderately difficult to implement after construction
Promote development of natural protective features, such as wetlands and mangroves, in vulnerable areas; limit destruction of such areas where they currently exist	Mitigates storm surges that may be enhanced with rising sea levels	\$-\$\$	Moderately easy to implement; could require social and political will
Harden vulnerable coastline and protect coastal infrastructure using seawalls and breakwaters	Reduces inundated areas	\$\$\$\$	Difficult to implement; could result in adverse impacts
Replenish beaches as a near-term solution	Temporarily counteracts loss of beaches from erosion	\$\$	Moderately difficult to implement; requires capacity, political and social will, could have adverse impacts
Identify and develop alternative inundation safe transportation routes	Provides transportation routes	\$	Easy to implement
Re-site structure(s) or consider sea level rise risk in the siting and design of new structures; implement setbacks	Reduces exposure	\$-\$\$	Moderately easy to difficult to implement, depending on site conditions; could require political will
Hazard and Impact to Sector Storm Surge Destruction of or damage to tourist structures and dependent structures (transportation, utilities, etc.)			
Elevate structure(s)	Reduces exposure	\$-\$\$	Easy to implement during design/construction; moderately difficult to implement after construction
Use breakaway walls ¹	Reduces damage potential from water	\$\$	Moderately easy to implement
Re-site structure(s) or consider sea level rise risk in the siting and design of new structures	Reduces exposure	\$-\$\$	Moderately easy to difficult to implement, depending on site conditions; could require political will
Develop road closure map	Allows tourists to be moved safely	\$	Easy to implement
Hazard and Impact to Sector Hurricane Winds Destruction of or damage to tourist structures and dependent structures (transportation, utilities, etc.) exposed to high winds			
Use hurricane straps for houses/structures	Reduces damage potential from wind	\$-\$\$	Easy to implement
Shuttering	Reduces damage potential from wind	\$\$	Easy to implement

¹ A breakaway wall is defined as "A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system." Refer here for definition and additional information: <<https://www.fema.gov/national-flood-insurance-program/breakaway-wall>>.

Climate Change Risk Management Options for the **Tourism Sector**

Climate Change Risk Management Options	How the Option Addresses Hazard	Relative Cost	Implementation Feasibility
Use hip roofs, secondary water resistance, and roof deck attachments (screws, large nails and tighter spacing) to keep roof on	Reduces damage potential to roof from wind	\$\$	Moderately easy to implement; requires technical expertise
Identify evacuation route	Allows tourists to be moved safely	\$	Easy to implement
Hazard and Impact to Sector Rising water temperature and acidity are (combined with pollution) a risk to coastal ecosystems Ecosystems and reefs are a draw for tourism and any negative impact to them would result in a negative impact to tourism			
Conservation efforts	Protects natural assets that may be a key source of the tourist arrivals	\$-\$\$\$	Moderately easy to difficult to implement; requires political and social will
Hazard and Impact to Sector Flooding Destruction of or damage to tourist structures and dependent structures (transportation, utilities, etc.) in the flood inundation area			
Elevate structure(s)	Removes it from major impact	\$-\$\$	Easy to implement during design/construction; moderately difficult to implement after construction
Use breakaway walls	Reduces damage potential from water	\$\$	Moderately easy to implement
Re-site structure(s)	Reduces exposure	\$-\$\$	Moderately easy to difficult to implement, depending on site conditions; could require political will
Redundant energy system	Reduces reliance on electric utility	\$\$	Moderately easy to implement
Hazard and Impact to Sector Drought Water restrictions and extreme conditions have a negative impact on tourism and limit growth of tourism sector			
Water catchment from roofs	Reduces reliance on water utility	\$\$	Easy to implement
Low flow devices	Reduces amount of water consumed	\$	Easy to implement
Water conservation practices in facilities and landscape	Reduces amount of water consumed	\$	Moderately easy to difficult to implement; requires social and political will
Hazard and Impact to Sector Extreme Temperatures Extreme conditions and no electricity/air conditioning have a negative impact on tourism			
Redundant energy system; develop facility designs for greater cooling capacity	Reduces reliance on electric utility	\$\$-\$\$\$	Moderately easy to implement
Establish cooling centers ² and air conditioning	Reduces potential injury to tourists	\$-\$\$	Easy to implement

² A location that can be made available to the public as a cooling shelter during a heat wave.

Table Guide

The relative costs and implementation feasibility are indicated for each option based on the professional judgment of the authors, and only to be taken as an **approximate starting point** for additional analysis. The costs have been broadly categorized into four levels (identified as \$ to \$\$\$\$) with the following general meaning:

\$ = Relatively straightforward to implement, either simple changes on the ground or adoption of new regulations/guidelines etc.

\$\$ = Relatively small scale projects on the ground that can be implemented with modest design and planning requirements.

\$\$\$ = Intermediate scale efforts, more spatially extensive, and/or requiring more engineering design, scientific development, and/or planning/institutional changes than in the above two categories.

\$\$\$\$ = Major new infrastructure development with significant new design, planning and permitting requirements.

The relative degree of difficulty is indicated for each option using the following four broad categories (difficult, moderately difficult, moderately easy, and easy) with the following general meaning:

Easy = Relatively straightforward to implement, provides long-term benefits, has no adverse secondary impacts.

Moderately easy = Minimal demands on capacity (staffing, funding, and maintenance capabilities), option is not expected to result in significant social or environmental impacts.

Moderately difficult = Intermediate scale efforts required to implement; option could require further assessment of environmental and social impacts, additional regulatory requirements, or capacity and technical expertise.

Difficult = Major effort would be needed to implement; option could result in adverse environment/social impacts, or could require significant expenditures, capacity, technical expertise, political will, or legal authority.

Other fact sheets in this series include climate change risk management options for the:

- ▶ Agriculture Sector
- ▶ Energy Sector
- ▶ Water and Sanitation Sector
- ▶ Urban Infrastructure Sector
- ▶ Transportation Sector



For more information

IDB Environmental Safeguards Unit has mandated a more in-depth document to accompany this factsheet. To obtain a copy, or for more information on IDB Environmental Safeguards Unit's climate change risk assessment process, contact Hilary Hoagland-Grey, Lead Environmental Protection Specialist, at hilaryhg@idb.org.

The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.

Copyright © 2015. This work is licensed under a Creative Commons IGO 3.0 Attribution-NonCommercial-NoDerivatives (CC-IGO BY-NC-ND 3.0 IGO) license (<http://creativecommons.org/licenses/by-nc-nd/3.0/igo/legalcode>) and may be reproduced with attribution to the IDB and for any non-commercial purpose. No derivative work is allowed.

Any dispute related to the use of the works of the IDB that cannot be settled amicably shall be submitted to arbitration pursuant to the UNCITRAL rules. The use of the IDB's name for any purpose other than for attribution, and the use of IDB's logo shall be subject to a separate written license agreement between the IDB and the user and is not authorized as part of this CC-IGO license.

Note that link provided above includes additional terms and conditions of the license.

