



Alternative Development Models and Good Practices for Sustainable Coastal Tourism: A Framework for Decision Makers in Mexico

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Terms & Abbreviations

CIP – Centro Integralmente Planeado (or Integrally Planned Tourism Center)
CONAGUA – Comision Nacional de Agua
CREST – Center for Responsible Travel
EPA – Environmental Protection Agency (U.S.)
FEE – Foundation for Environmental Education
FONATUR – Fondo Nacional de Fomento al Turismo
General Tourism Law – Ley General de Turismo
GSTC – Global Sustainable Tourism Council
ICF – International Community Foundation
IDB – Inter-American Development Bank
MARTI-- MesoAmerican Reef Tourism Initiative
NOAA – National Oceanic and Atmospheric Administration
SECTUR – Secretaria de Turismo
SEMARNAT – Secretaria de Medio Ambiente y Recursos Naturales
SIFT – Sustainable Investment and Finance in Tourism Network
WTTC – World Travel and Tourism Council
UNWTO – United Nations World Tourism Organization

Introduction: Achieving Competitiveness and Sustainability in Mexico's Tourism Industry

The Calderon government has set the admirable and ambitious goal of positioning Mexico as one of the leading tourism destinations in the world. Mexico currently ranks 10th (22.3 million) in international tourism arrivals and 23rd (\$1.18 billion¹) in international tourism receipts, according to the UN World Tourism Organization (UNWTO) statistics published in late 2011.² Mexico also ranked 43rd globally for travel and tourism competitiveness, which measures the climate for investment in tourism.³ In terms of the national economy, tourism ranks as Mexico's third highest foreign exchange earner.⁴

Since 1995, Mexico's global ranking for tourism arrivals has gradually fallen, even though overall, the number of international visitors has grown modestly, from about 20 million in 1995 to just over 22 million in 2010. But as global travel has rapidly expanded, Mexico's ranking among other countries has steadily slipped, from 7th in the world in 1995 and 1996, to 8th in 1998 – 2000, to 10th in 2010.⁵ Mexico's global ranking for international tourism receipts has also fallen, despite an upward trend in international receipts per tourist arrival. In 1990, Mexico was ranked as 10th in international tourism receipts; however, in 2010, Mexico had dropped significantly to 23rd place, behind, for instance, Turkey, Canada, Hong Kong, and Greece.⁶



President Felipe Calderon signing the National Accord for Tourism

Credit: www.sectur.gob.mx

As part of a broad-based coordinated initiative to improve Mexico's position in international tourism, the government declared 2011 to be "The Year of Tourism" and in February, President Felipe Calderon and Tourism Secretary Gloria Guevara signed, at a high-profile ceremony at the National Palace in Mexico City, a new National Accord for Tourism. They announced the goal was to position Mexico as one of the top five tourist destinations in the world by 2018.⁷

The Calderon government describes the National Accord as "an unprecedented effort that required the coordinated work of all participating actors in the tourism sector." The UNWTO, in turn, praised the Accord and hailed Mexico as "the first country to support a global agenda for tourism." The Tourism Accord is accompanied by an annex which includes 101 proposed legal and administrative actions that the Federal Government, state governments, and a range of

¹ This and other monetary numbers in the report are in U.S. dollars.

² "Statistical Annex," *UNWTO World Tourism Barometer*, Vol. 9, October 2011.

³ World Economic Forum, *The Travel & Tourism Competitiveness Report 2011*, 2011.

⁴ Secretaria de Turismo, www.sectur.gob.mx

⁵ "International Tourist Arrivals" *UNWTO Tourism Highlights*, 2011, 2006, 1999, 1996 editions.

⁶ "Tourism Highlights," UNWTO, 2011 edition, p. 8.

⁷ Acuerdo Nacional por el Turismo,

http://www.sectur.gob.mx/es/sectur/Que_es_el_Acuerdo_Nacional_por_el_Turismo.

government agencies -- Foreign Relations, Finance, Social Development, Environment and Natural Resources, Energy, Economy, Tourism, and FONATUR, among others -- will undertake; it also includes a series of initiatives to be taken by the private sector, academia, and other sectors of civil society.⁸

To improve Mexico's global ranking, the government correctly argues that its tourism industry must become both competitive and sustainable. Competitiveness and sustainability are listed among the Tourism Accord's top ten pillars or "Strategic Objectives" (ejes).

The Accord's pillar #5 on competitiveness states that Mexico will "elevate the competitiveness of tourism destinations and companies in order to guarantee a better experience for tourists..."⁹ and sets the following four important targets to be met by 2018:

- 1) Increase income from tourism from \$11.87 billion in 2010 to \$40 billion. This will require growth of 16.4% each year.
- 2) Generate 4 million direct jobs and about 12 million indirect. In 2010, the tourism sector accounted for about 7.5 million direct and indirect jobs combined. New tourism jobs will need to grow by 9.9% each year.
- 3) Bring in 50 million international tourists, more than double the level from 2010.
- 4) Achieve 300 million national visitors, a growth of 140 million compared to 2010.

In terms of sustainability, the Accord states, in pillar #10, that Mexico is committed "to promoting balanced and sustainable development so that tourism service providers act with conscience and under criteria for environmental conservation, energy savings, and preservation of natural resources."¹⁰

The Tourism Accord's Annex includes nine specific government "actions" to promote sustainability. These are:

- 1) Register 300 hotels and tourism SMEs in the Environmental Leadership for Competitiveness Program.
- 2) Increase the number of national sustainable beaches via certification of 30 beaches.
- 3) Increase the number of sustainable businesses by certifying 40 ecotourism businesses.
- 4) Establish a goal of six million annual visitors to the Natural Protected Areas.
- 5) Support the certainty and agility of environmental and urban efforts for the development of tourism projects via the operation of 10 "Unique Window" schemes in the coastal states.
- 6) Promote environmental sustainability by taking measures to ensure tourism events are carbon neutral.
- 7) Put in place energy saving programs in hotels and with tourism service providers, and share information on new energy saving technologies with the tourism sector that allow a reduction in energy consumption of up to 37%.
- 8) Promote the sustainable use of water through the construction and operation of waste water treatment plants in 5 tourism destinations.

⁸ Acuerdo Nacional por el Turismo,

⁹ This is listed as #5 among the top ten pillars of the Tourism Accord. Acuerdo Nacional por el Turismo, "10 Ejes," <http://www.sectur.gob.mx/work/models/sectur/Resource/1323/1/images/10%20Ejes.pdf>.

¹⁰ This is listed as #10 among the top pillars. Acuerdo Nacional por el Turismo, "10 Ejes."

- 9) Promote the natural heritage of Mexico and foster awareness for its conservation and protection of the environment through the international tourism agenda and forums.¹¹

All these initiatives mark important steps towards achieving sustainability. However, it appears noteworthy that the Tourism Accord fails to include three important instruments—one legal, one institutional, and one international -- as playing roles in promoting sustainability in the Mexican tourism industry.

The first is the Calderon government's General Tourism Law which was published in 2009. This law puts sustainability as a centerpiece, stating that a primary objective is: "To establish the basis for tourism policy, planning, and programming in the whole national territory under criteria for social and sustainable benefit...". However, this law is not yet fully implemented because the regulations (*reglamento de la ley*) remain in draft form, with no clear path forward for approval. The Tourism Accord does not call for government approval of these regulations as one of its "actions." Rather the Accord's 101 Actions make only passing reference to the General Tourism Law as playing a role in increasing consumer protection within the tourism industry.

Second, the Tourism Accord does not include the Fondo Nacional de Fomento al Turismo (FONATUR) as one of the government institutions with a role in implementing the nine sustainability targets listed above. In the Accord's 101 Actions, FONATUR's responsibilities are confined to: 1) helping to increase investment in infrastructure in tourism centers through construction of new roads, an airport and cruise terminal, and two Integrally Planned Tourism Centers (CIP's) in Sinaloa and Nayarit and 2) constructing "a prototype tourist stop" in a number of national parks and reserves "with the aim of establishing environmental education and sensitivity programs." Given FONATUR's long and controversial history in building large-scale coastal tourism destinations in Mexico, it seems imperative that the Accord outline the steps this agency needs to take to ensure that its projects are environmentally and socially, as well as economically, sustainable.

Third, the Tourism Accord, which is intended to make Mexico one of the top five tourism destination in the world, makes no mention of incorporating what are widely accepted international standards and criteria for sustainable siting, design, construction, and operations of hotels and resorts and other components of the tourism industry. Indeed, Mexico can only become a 21st century leader in tourism if it fully embraces internationally accepted sustainability principles and best practices, together with competitiveness.

This report by the Center for Responsible Travel (CREST) addresses the importance of incorporating these legal, institutional, and international instruments into Mexico's national strategy to build a more sustainable and competitive tourism industry. It is intended as a guide for decision makers involved in coastal tourism, both in government (SECTUR, FONATUR, SEMARNAT, etc.) and the private sector (developers, planners, architects, operators, financiers, etc). It opens with analysis of key issues of importance in creating sustainable tourism in Mexico: 1) the General Law of Tourism and its proposed regulations, 2) trends in both consumer demand and in public and private financing for more socially and environmentally responsible tourism projects, and 3) the imperative of addressing the impacts of climate change in coastal tourism

¹¹ Acuerdo Nacional por el Turismo, "Anexo de acciones,"
<http://www.sectur.gob.mx/work/models/sectur/Resource/1323/1/images/AANT16032011.pdf>.

developments. Then the report looks at five key components of coastal tourism projects: site selection, resorts, “residential tourism” (vacation homes), marinas, and golf courses. It discusses the environmental and social impacts of each, government regulations, and good practices and certification programs. Each chapter concludes with brief case studies of coastal developments with exemplary practices in one or more of these specific areas.

CREST decided to focus on coastal tourism for three primary reasons:

- Coastal tourism is one of the fastest growing sectors in the tourism industry, both globally and in Mexico.¹²
- Coast lines and oceans are being heavily impacted by large-scale tourism-related development.¹³
- Most FONATUR projects have been and continue to be conventional large-scale coastal developments.

This Framework for Decision Makers offers alternative models to conventional coastal tourism development. While the term “sustainable tourism” is widely used, it can be difficult to understand because virtually no large scale coastal resorts have implemented sustainable environmental, social, and economic practices throughout their operations. Instead, we find scattered along the coastlines in Mexico and elsewhere, examples of resort complexes that have good practices in one or more specific areas. Taken together, however, this report provides an overview of the range of sustainable practices that should be incorporated into the design, construction, and operations of large scale coastal tourism projects.

A central thread running through this guide is that Mexico, to be internationally competitive, can and must embrace the best in internationally accepted practices for sustainable tourism. We are fortunate that today there is a road map for sustainable tourism development. This road map did not exist when, in the 1960s and early 1970s, the Mexican government first set out to develop international tourism as an important sector of the economy. The model for Cancun and FONATUR’s other coastal resort destinations was to provide “a uniform product according to inflexible organizational principles” and geared to “a foreign, upper-income clientele.”¹⁴ While the stated aims, particularly for developing countries, were to help address poverty and to bring development to marginal areas of the country, the reality was that the tools for doing so did not yet exist.

This was in the era before there was global environmental consciousness and before there were alternative models in developing countries to large-scale, foreign owned hotels and resorts that provided a consistent product in all destinations. Travelers and existing certification programs like the 5 star, 5 diamonds, or AAA rate hotels, restaurants, and other sectors of the tourism

¹² Martha Honey and David Krantz, CREST, *Global Trends in Coastal Tourism*, 2009, http://www.responsibletravel.org/resources/documents/reports/Global_Trends_in_Coastal_Tourism_by_CESD_Jan_08_LR.pdf.

¹³ CREST, *Global Trends in Coastal Tourism*; Martha Honey, Erick Vargas, and William Durham, CREST, *Impact of Tourism Related Development on the Pacific Coast of Costa Rica*, CREST, 2010, http://www.responsibletravel.org/resources/documents/Coastal-tourism-documents/Summary%20Report/Summary_Report_-_Impact_Tourism_Related_Development_Pacific_Coast_Costa_Rica.pdf; David Krantz and Martha Honey, “Assessment of FONATUR’s EIA for the CIP Costa Pacifica,” CREST, July 2010.

¹⁴ Daniel Hiernaux-Nichols, “Cancun Bliss,” in *The Tourist City*, edited by Dennis Judd and Susan Fainstein, Yale University Press, 1999, pp. 131.

industry were based on quality, service and price. Tourism businesses were focused on a single bottom line: financial profitability. And Mexico, like other governments, rated success by the growth in numbers of tourism arrivals.

By the late 1970s this type of conventional mass tourism began to be challenged by new concepts and models. The term “ecotourism” was coined in the late 1970s and early 1980s, probably by the Mexican architect and avid birder Hector Ceballos-Lascurain. The definition centered on exploring nature, and it also posited that, done well, ecotourism would bring positive benefits for both conservation and the local communities.¹⁵ By the 1990s, ecotourism had become the fastest growing sector of the tourism industry, said to be increasing between 10% and 34% a year.¹⁶

By the dawn of the new millennium, a new concept – “sustainable tourism” – had taken root alongside ecotourism. Sustainable tourism, which is grounded in the concept of sustainable development, is defined as tourism that “meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future.”¹⁷ While ecotourism typically is focused on nature-based tourism, sustainable tourism according to the UNWTO “should apply to all types of tourism activities, operations, establishments and projects, including conventional and alternative forms.”¹⁸ In essence, sustainable tourism is taking the good practices that have been developed and honed by ecotourism and adapting them to all sectors of the tourism industry.

Today there are a range of other ‘green’ tourism terms – responsible tourism, Geotourism, pro-poor tourism, among others. While these terms have nuanced differences, they are all grounded in the concept of the “triple bottom line”: that tourism projects and destinations should be economically, environmentally, and socially sustainable.

Following the 1992 UN Earth Summit, certification programs were developed for many industries, including tourism, designed to measure this triple bottom line, rate impacts, and give awards to exemplary businesses. Currently, there are estimated to be some 130 certification and rating systems for sustainable tourism – a reality that causes consumer and industry confusion.¹⁹ But there is good news: several global initiatives have worked to create a template of the most important criteria to be incorporated in tourism businesses at the design, construction, and operations stages. This guide looks at the legal and voluntary standards for different components of Mexico’s coastal tourism industry, and proposes how each could incorporate widely endorsed international criteria. This will strengthen existing certification national programs, as well as help to make Mexico more internationally competitive.

A central component of both ecotourism and sustainable tourism is that the ***emphasis should be on high value, not simply high volume tourism.*** While visitor numbers certainly matter, more

¹⁵ In 1990, The International Ecotourism Society (TIES) proposed what is today the most widely accepted definition of ecotourism: “Responsible travel to natural areas that conserves the environment and improves the welfare of local people.” Martha Honey, *Ecotourism and Sustainable Development: Who Owns Paradise*, Island Press, 2011, pp. 28-33.

¹⁶ Honey, *Who Owns Paradise*, p. 7.

¹⁷ WTTC, UNWTO, and Earth Council, “Agenda 21 for the Travel & Tourism Industry,” 1995

¹⁸ Heba Aziz and Edith Szivas, “Tourism,” Chapter 8, p. 236, in UNEP, *Tourism: Investing in Energy and Resource Efficiency*, 2011, <http://afedonline.org/Report2011/PDF/En/chapter%208%20tourismC&C.pdf>.

¹⁹ Erika Harms, Executive Director and Kelly Bricker, Board Chair, GSTC, “An Open Letter to our Sustainable Travel and Tourism Colleagues,” October 11, 2011, http://new.gstccouncil.org/uploads/files/gstc_open_letter_oct_11_2011.pdf.

important is the amount of money each tourist leaves in the destination. Mexico's current ranking as 23rd in international tourist receipts and 10th in arrivals, shows that it is not generating as much per tourist as other countries. In 2010, Mexico was receiving an average of \$530 per international tourist arrival – significantly less than the 10th ranked country in international tourist receipts (Turkey), which received an average of \$770, or \$240 more per international arrival than Mexico²⁰.

In contrast, Costa Rica, for instance, has since the late 1980s built highly successful ecotourism and more recently sustainable tourism sectors. Tourism, which was negligible in the early 1980s, is now the country's top foreign exchange earner. And this has happened both through increasing tourism arrivals and, more importantly, earnings per tourist. Government statistics show that between 1986 and 2005, international tourist arrivals to Costa Rica increased just over 6-fold, while the country's gross receipts from tourism increased 12-fold. This means that Costa Rica is, on average, capturing today twice as much per tourist – close to \$1,000 each -- as it did in 1986, before the introduction of ecotourism and sustainable tourism.²¹

In order to be competitive in the 21st century, Mexico must strive to capture what are the most dynamic and innovative sectors of the tourism market, both in terms of consumer and investor preferences for socially and environmentally responsible tourism. To improve its international ranking, and to protect its natural and cultural heritage for future generations, Mexico's tourism policies and actions need to incorporate the latest in principles and practices for sustainable tourism.

Despite important initiatives by the Mexican government, the reality is that FONATUR's current coastal developments have incorporated the language but, in the main, not the good practices to ensure sustainability and, in doing so, they appear to have ignored some important consumer trends and investment preferences.

²⁰ "Tourism Highlights," UNWTO, 2011 edition.

²¹ Honey, *Who Owns Paradise*, p. 63 and various CREST power point presentations.

Key Findings and Recommendations

Mexico's General Tourism Law/ Ley General de Turismo: This important law, which was published by SECTUR in 2009, is not yet in force because the regulations which fill in the operational details for the law are incomplete and have not been approved. Unfortunately, an early draft of the regulations lacks the rigor needed to bring Mexico's sustainable tourism initiatives in line with international standards. We recommend that SECTUR revise the regulations to incorporate sustainability criteria in two widely-accepted international standards: the Global Sustainability Tourism Criteria (GSTC) for tourism operations and the Tourism Sustainability Scorecard of the Inter-American Development Bank which provides a template for sustainable construction. This will both strengthen the General Tourism Law and bring it into compliance with the best international practices, thereby enhancing Mexico's competitiveness.

Consumer Demand and Investor Interest in Sustainability: A variety of market studies over the past ten years have documented strong and growing interest among consumers in tourism products and services that preserve the environment and respect local cultures. This growing consumer demand for sustainability, as well as the cost savings and risk reductions of sustainable development, is attracting the attention of international public and private investors and lenders. Many of the world's leading public and private investors and financiers have embraced sustainable and socially responsible investing, as reflected in the amount of capital now invested based on those principles. New resorts and attractions that incorporate sustainable design, construction, and operations may therefore have access to these sources of capital where conventional projects would not. In order for Mexico to achieve its ambitious growth objectives under the National Accord for Tourism (Acuerdo Nacional por el Turismo), it will need to capitalize on these long-term trends that favor sustainability by incorporating the good practices outlined in this Framework.

Site Selection: Establishing the location of new tourism construction is the development decision with the greatest environmental and social impact. This is where private sector developers, land owners and public agencies need further education regarding the importance of site selection in ensuring sustainable development. As a government agency, FONATUR has a responsibility to choose sites that ensure their tourism projects will be not only economically, but also socially and environmentally sustainable. Regrettably, a number of sites chosen by FONATUR and approved by SEMARNAT have caused environmental and social damage. FONATUR describes several recent developments as "sustainable" and "environmentally responsible," but the development decision that most impacts a project's sustainability, the site selection, was not done in accordance with international good practice. Cabo Cortes and CIP Costa Pacifico, for instance, are located where they threaten sensitive ecosystems including coral reefs and wetlands. In order to comply with their own sustainability language, the commitments made in the National Accord for Tourism, and internationally recognized good practices in site selection, FONATUR – and private developers -- should carefully weigh the following six factors: (1) commercial suitability of the site (2) going beyond legal compliance (3) appropriate scale of proposed development (4) natural heritage and environmental value of land (5) social context and cultural heritage of the proposed site, and (6) unintended consequences of land use change. The good practices associated with these factors have been identified by the international tourism community, international agencies, and lending institutions as critical to ensuring that site selection contributes to long term sustainability.

Climate Change and Tourism Development in Mexico: Coastal tourism is both contributing to and is affected by climate change. Resort developments that burn fossil fuels for energy or destroy mangroves and other coastline habitats contribute to climate change. Climate change is also affecting coastal tourism in Mexico. It is already causing or is projected to cause increases in extreme weather, changes in rainfall, coral bleaching, sea level rise, declines in crop yields and forest cover, and loss of biodiversity. All these conditions will significantly impact the economic prosperity of coastal tourism. There are two broad strategies for tackling climate change: *mitigation* that addresses the causes of climate change and *adaptation* that deals with its effects. Adaptation measures in Mexico's coastal tourism are, at present, scarce. And while the Mexican government has set the ambitious goal to reduce greenhouse gas emissions 50% by 2050, only a few large tourism developments are getting their energy from renewable sources. Even newly proposed CIPs like Costa Pacifico are counting primarily on burning oil for their electricity. A number of good practices for addressing climate change in coastal tourism have emerged over the past decade. There is an urgent need for SEMARNAT and SECTUR to implement these practices through a comprehensive adaptation and mitigation strategy. Doing so will help to protect existing tourism assets, reduce tourism's contributions to climate change, and meet sustainability objectives outlined in the National Accord for Tourism and elsewhere.

Coastal Resorts: Accommodations – hotels, resorts, villas, condominiums, second-homes etc. – are the centerpiece of Mexico's coastal tourism development. By 2009, Mexico had over 16,000 hotels and the growth of hotels (up 15%) was outstripping the growth of overnight stays (down 2%) and room occupancy (down 13%) since 2005. From its beginning in the 1970s, FONATUR's model for coastal development has been "all-inclusive" mega-resort complexes that provide all amenities and activities (restaurants, golf, spas, shopping centers, and marinas) within the complex and are geared to the international market. In recent years, vacation homes have been added to these complexes. These mega-resort developments have put increasing pressure on fragile ecosystems, especially within the Federal Maritime Land Zone. Impacts include destruction of local flora and fauna, pollution of the soil and water, introduction of invasive species, land erosion, and a conversion from public beaches into private ones.

While the quality, service, and price of hotels are rated under the five star certification program, Mexico does not yet have a national certification program to measure the environmental and social impact of hotels. It does have a few "green" certification programs for specific types of tourism: one for ecotourism and a new one for coastal resorts in the states of Campeche, Quintana Roo, and Yucatan. Introduced in 2011, this comprehensive certification program has not yet been officially approved. Some resorts have been certified by international programs. At present there are 29 hotels certified or benchmarked by EarthCheck, including resorts along the Pacific Coast, the Caribbean coast, and the Gulf of Mexico, and 3 coastal resorts certified by Green Globe.

Even without a national "green" certification program, there are a number of national and international standards that can be used by the government and hotel developers and operators to ensure good environmental and social practices. Two of the most important are the Global Sustainable Tourism Criteria and the IDB's Sustainability Scorecard for Tourism Projects in Latin America and the Caribbean. Among the coastal resorts to incorporate sustainable practices are three in the Maya Riviera – Mayakoba, Tres Rios, and Kanai -- that are widely regarded as models for sound environmental planning and management of coastal tourism developments. In addition, The Haciendas, a collection of five high-end luxury hotels in Yucatan and Campeche, is one the best examples in Mexico of travelers' philanthropy that supports community social and environmental projects.

Residential Tourism: Today most new coastal resort developments include houses or condos that are owned, rented, or leased to either foreigners or nationals for vacation or retirement. In recent years private investment in vacation and retirement homes – “residential tourism” -- has accounted for about one-third of total investment in Mexico’s tourism sector. By combining a resort property with vacation homes, investors first build and sell the homes and then use the proceeds to finance resort construction. In turn, these vacation homes can command a higher price because of the complementary services within a resort complex. FONATUR’s proposed CIP Costa Pacífico near Marismas Nacionales, for instance, includes 64% (29,361 rooms) of the total rooms be for residential housing, with only 36% for hotel rooms. In late 2009, there were 957 new vacation and retirement-focused development projects across Mexico, with the majority being located in coastal areas, and one out every three tourists were staying at a timeshare.

This rapid recent growth of residential tourism is driven largely by U.S. retirees who have made Mexico the #1 overseas retirement destination for older Americans. A recent study of the profile of U.S. retirees in Mexico’s coastal communities found that a majority are environmentally and socially conscious: 63% are interested in environmentally sustainable housing, 70% said they contribute financially to at least one Mexican nonprofit organization, and 70% say walking on the beach is their favorite pastime, while under 20% own a boat or play golf.

In other ways, however, the impact of residential tourism on the host country is far more questionable. Residential tourism consumes more water and land per person, competes with hotels for occupants but pays far less in taxes, and creates only 0.3 jobs/room compared with 1.1 jobs/room in hotels. In addition, residential tourism contributes less to the local economy: retirees in Mexico’s coastal communities report spending on average \$1000 per month, while international tourists spend on average \$751 for a week’s stay, or the equivalent of \$3000 per month. At the same time, the Mexican government provides a very broad incentive package that helps to attract international retirees. Particularly in coastal areas, residential tourism is occupying prime real estate that might bring more benefit if used for sustainable tourism. The government, therefore, needs to recognize both the costs and benefits of residential tourism. The Villages of Loreto Bay in Baja California Sur was one of the few experiments in triple bottom line sustainability for residential tourism, but since 2008 the project has been on hold because of combination of factors, including the economic recession and higher than budgeted construction costs.

Marinas: In Mexico there are 75 operating marinas with a capacity for 6,000 boats; 30 more marinas are in the planning, design, or construction stages. Nowadays most marinas, including those within FONATUR projects, are owned and operated as independent private businesses. Demand for marinas in Mexico depends on the region and project characteristics. While yachters and fishing boats from the U.S., vacation home owners, and retirees comprise a significant percentage of the demand in Baja California, Mexican boaters have fueled most of the recent growth of the boating industry in Cancún. In Baja California, the traffic of megayachts has increased significantly, while Cancun’s marinas target small and mid-size boats. These geographical distinctions mean that any potential marina project requires specific demand studies and is usually dependent on a number of factors, including residential growth projections, trends of tourism arrivals, regional boating characteristics, and the strength of the particular boating market segments targeted.

The environmental and social impacts of marinas have often been negative. For example, Cabo

Riviera Marina under construction in Baja California Sur has caused severe erosion along the beach on one side of the breakwaters, while nearby an even more massive project, Cabo Cortes, is opposed by local residents and environmentalists who charge it will consume 100% of the fresh water, destroy sand dunes, and damage an important marine park. Social sustainability and community inclusion are seldom considered in marina projects.

Marinas that adhere to what is increasingly recognized as good practices in design, construction and operations can have a net positive environmental, social, and economic impact overall. Mexico's voluntary compliance norm for marinas provides general guidelines for environmental protection for site selection, design, construction and operation of marinas. However, it is not legally enforceable. There are two major voluntary certification programs that promote good practices for marinas: Blue Flag, an international program that has certified over 600 marinas, but none in Mexico and the U.S. based Clean Marina Program that has certified 110 marinas in the U.S. and one in Mexico, Paradise Village Marina and Yacht Club, located in Nuevo Vallarta.

Golf Courses: Mexico has over 150 golf courses, of which some 40 are at beach resorts. However, consumer demand for golf courses is small and has been declining. Few Mexicans play golf and only 14% of U.S. retirees in Mexico's coastal communities say they play golf – behind bird watching, fishing, or walking on the beach. Most significantly, only 2% of international tourists in Mexico play golf during their holiday. In addition, in the U.S., the country that sends the most tourists to Mexico, *consumer interest in golf has been declining for more than a decade*. Therefore, building more golf courses is unlikely to significantly increase tourism.

Despite the fact that most Mexican golf courses are underused and struggle economically, they have become standard components in coastal tourism developments. The reason is real estate speculation: vacation and retirement homes around a fairway typically command a 20% higher price. While this benefits private developers, golf courses cause a range of negative environmental and social problems, including habitat loss, soil and aquifer contamination, and unsustainable water consumption.

To help ensure golf courses are sustainable, FONATUR and SEMARNAT, as well as private developers, need to assess consumer demand and consider alternatives such as creating natural protected areas or installing equestrian centers instead. When new courses are built, they should adopt the good practices in site selection, design, construction, and operation found, for instance, in the IDB's Tourism Sustainability Scorecard or Audubon International's certification program. At present, only two Mexican golf courses have been certified by Audubon Cooperative Sanctuary Program: Cozumel Country Club and El Camaleón Mayakoba, both on the Caribbean coast.

Reglamento de la Ley General de Turismo

Introduction

Mexico's General Tourism Law (Ley General de Turismo), published on June 17, 2009, has a strong emphasis on sustainability, however its full implementation has been delayed because the *reglamento* of the law remains incomplete and, as of the end of 2011, without a clear path to adoption. The delay represents an opportunity for policy makers to ensure that the law's emphasis on sustainability becomes more than just window dressing, but instead helps Mexico to meet its economic goals for tourism while truly protecting its natural and cultural heritage.

The General Tourism Law

The 2009 General Tourism Law constitutes an important step in setting the future of tourism in Mexico, and several key sections refer specifically to sustainable tourism. Items II and III under Article 2, for instance, place sustainability at the front and center of the law's primary objectives:

"To establish the political basis, planning and programming for tourism activity in the whole national territory, under criteria for social and sustainable benefit..."

"Determine mechanisms for the conservation, improvement, protection, promotion, and exploitation of national tourism resources and attractions, while, based on criteria, preserving natural and cultural heritage and ecological balance..."

Both of these objectives not only make it clear that sustainability is a primary purpose of the law, but that all sustainability efforts should be based on criteria. This is appropriate because sustainable development is also defined by the government as being based on criteria and indicators,²² and it makes it especially important that any criteria used be of the highest quality. Chapter VIII establishes Sustainable Tourism Development Zones, and defines them broadly as "areas of national land that, for their natural or cultural characteristics, constitute a tourist attraction". Article 31 states that the *reglamento* should spell out the details for implementation of these Zones:

"The requirements and procedures for declaring Sustainable Tourism Development Zones, as well as their classification, should be established in the law's corresponding *reglamento*."

²² Ley General de Equilibrio Ecológico y la Protección al Ambiente (LGEEPA), artículo 3, dedicado a las definiciones, sección 11, defines "desarrollo sustentable" as: "El proceso evaluable mediante criterios e indicadores del carácter ambiental, económico y social que tiende a mejorar la calidad de vida y la productividad de las personas, que se funda en medidas apropiadas de preservación del equilibrio ecológico, protección del ambiente y aprovechamiento de recursos naturales, de manera que no se comprometa la satisfacción de las necesidades de las generaciones futuras."

The *Reglamento* of the General Tourism Law

An early draft of the *reglamento*, which should serve to fill in the details of the general law, was released through a Freedom of Information request in October 2010, and no updates have been published since. Unfortunately, the sustainability components of the early version, including those addressing the Sustainable Tourism Development Zones, lack the rigor needed to bring Mexico’s sustainable tourism initiatives in line with international standards.

Article 38 of the draft *reglamento*, for example, provides guidance for an evaluation of sustainability when considering requests for declarations of Sustainable Tourism Development Zones. It offers a few general sustainability concepts, such as “current uses and conservation, current and potential utilization of natural resources” and “preservation of cultural values,” but it doesn’t reach the level of specificity needed to be effective, and it’s not enough to be on par with similar evaluation criteria being used by Mexico’s competitor destinations like the Dominican Republic or Costa Rica. In order for Mexico to be internationally competitive and sustainable over the long term, the *reglamento* should be based on, and incorporate, the growing body of internationally accepted tourism sustainability criteria.

Two widely-accepted documents that can help SECTUR develop sustainability criteria for tourism in Mexico are:

- 1) The Global Sustainable Tourism Criteria (GSTC)
- 2) The Inter-American Development Bank’s Tourism Sustainability Scorecard

The criteria in these documents should be used to define sustainable practices required within the Sustainable Tourism Development Zones. A broader application of the criteria is also strongly encouraged to ensure that the Zones don’t become islands of sustainability surrounded by un-sustainable urban growth. Applying the good development and management practices associated with these criteria across all of Mexico’s touristic areas will help Mexico become more competitive and sustainable over the long term.

The table below summarizes each document:

Source	Summary
Global Sustainable Tourism Criteria (GSTC)	<ul style="list-style-type: none">• 37 globally accepted baseline sustainability criteria for operating tourism businesses• Developed with broad consultative process involving stakeholders from the private sector, academia, government, and civil society• Covers sustainable management and social, economic, cultural, and environmental impacts• Consistent with the United Nations’ Millennium Development Goals• Provides a tool for accrediting sustainable tourism certification programs against a common template of criteria.• Adaptable to national and local realities

<p>Tourism Sustainability Scorecard of the Inter-American Development Bank (IDB)</p>	<ul style="list-style-type: none"> • Tool used by the Structured and Corporate Finance Department of the IDB to screen loan applications based on environmental, social and economic sustainability • Emphasis on new construction, also includes operations • Considers cumulative impacts on destinations of multiple tourism developments • A practical application of the GSTC • Adaptable to national and local realities
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Global Sustainable Tourism Criteria (GSTC)

The Global Sustainable Tourism Criteria represent the first set of broadly accepted baseline sustainability criteria for the tourism sector. They were developed with thorough global buy-in from the industry’s most important stakeholders in the private sector, academia, international agencies and civil society, and are part of the response of the tourism community to the global challenges of the United Nations’ Millennium Development Goals.



Beginning in 2007, a coalition of 27 organizations, led by the United Nations Foundation, United Nations World Tourism Organization and United Nations Environmental program, came together to develop the criteria. Since then, they have reached out to close to 100,000 tourism stakeholders, analyzed more than 4,500 criteria from more than 60 existing certification and other voluntary sets of criteria, and received comments from over 1,500 individuals. The Global Sustainable Tourism Criteria have been developed in accordance with the ISEAL Code of Best Practice, and as such will undergo consultation and receive input every two years until feedback is no longer provided or unique. In other words, this is *the* set of fundamental, *minimum*, criteria that define sustainability in travel and tourism.

The Global Sustainable Tourism Criteria are made of 37 criteria based on four pillars: effective sustainability management, social and economic benefits, cultural benefits and environmental protection, all of which are listed here below:²³

A. Demonstrate effective sustainable management.

- A.1. The company has implemented a long-term sustainability management system that is suitable to its reality and scale, and that considers environmental, sociocultural, quality, health, and safety issues.
- A.2. The company is in compliance with all relevant international or local legislation and regulations (including, among others, health, safety, labor, and environmental aspects).
- A.3. All personnel receive periodic training regarding their role in the management of environmental, sociocultural, health, and safety practices.
- A.4. Customer satisfaction is measured and corrective action taken where appropriate.
- A.5. Promotional materials are accurate and complete and do not promise more than can be delivered by the business.
- A.6. Design and construction of buildings and infrastructure:

²³ Global Sustainable Tourism Council (GSTC), “Global Sustainable Tourism Criteria,” www.gstccouncil.org.

- A.6.1. comply with local zoning and protected or heritage area requirements;
- A.6.2. respect the natural or cultural heritage surroundings in siting, design, impact assessment, and land rights and acquisition;
- A.6.3 use locally appropriate principles of sustainable construction;
- A.6.4 provide access for persons with special needs.
- A.7. Information about and interpretation of the natural surroundings, local culture, and cultural heritage is provided to customers, as well as explaining appropriate behavior while visiting natural areas, living cultures, and cultural heritage sites.

B. Maximize social and economic benefits to the local community and minimize negative impacts.

- B.1. The company actively supports initiatives for social and infrastructure community development including, among others, education, health, and sanitation.
- B.2. Local residents are employed, including in management positions. Training is offered as necessary.
- B.3. Local and fair-trade services and goods are purchased by the business, where available.
- B.4. The company offers the means for local small entrepreneurs to develop and sell sustainable products that are based on the area's nature, history, and culture (including food and drink, crafts, performance arts, agricultural products, etc.).
- B.5. A code of conduct for activities in indigenous and local communities has been developed, with the consent of and in collaboration with the community.
- B.6. The company has implemented a policy against commercial exploitation, particularly of children and adolescents, including sexual exploitation.
- B.7. The company is equitable in hiring women and local minorities, including in management positions, while restraining child labor.
- B.8. The international or national legal protection of employees is respected, and employees are paid a living wage.
- B.9. The activities of the company do not jeopardize the provision of basic services, such as water, energy, or sanitation, to neighboring communities.

C. Maximize benefits to cultural heritage and minimize negative impacts.

- C.1. The company follows established guidelines or a code of behavior for visits to culturally or historically sensitive sites, in order to minimize visitor impact and maximize enjoyment.
- C.2. Historical and archeological artifacts are not sold, traded, or displayed, except as permitted by law.
- C.3. The business contributes to the protection of local historical, archeological, culturally, and spiritually important properties and sites, and does not impede access to them by local residents.
- C.4 The business uses elements of local art, architecture, or cultural heritage in its operations, design, decoration, food, or shops; while respecting the intellectual property rights of local communities.

D. Maximize benefits to the environment and minimize negative impacts.

- D.1. Conserving resources

- D.1.1. Purchasing policy favors environmentally friendly products for building materials, capital goods, food, and consumables.
- D.1.2. The purchase of disposable and consumable goods is measured, and the business actively seeks ways to reduce their use.
- D.1.3. Energy consumption should be measured, sources indicated, and measures to decrease overall consumption should be adopted, while encouraging the use of renewable energy.
- D.1.4. Water consumption should be measured, sources indicated, and measures to decrease overall consumption should be adopted.
- D.2. Reducing pollution
 - D.2.1. Greenhouse gas emissions from all sources controlled by the business are measured, and procedures are implemented to reduce and offset them as a way to achieve climate neutrality.
 - D.2.2. Wastewater, including gray water, is treated effectively and reused where possible.
 - D.2.3. A solid waste management plan is implemented, with quantitative goals to minimize waste that is not reused or recycled.
 - D.2.4. The use of harmful substances, including pesticides, paints, swimming pool disinfectants, and cleaning materials, is minimized; substituted, when available, by innocuous products; and all chemical use is properly managed.
 - D.2.5. The business implements practices to reduce pollution from noise, light, runoff, erosion, ozone-depleting compounds, and air and soil contaminants.
- D.3. Conserving biodiversity, ecosystems, and landscapes
 - D.3.1. Wildlife species are only harvested from the wild, consumed, displayed, sold, or internationally traded, as part of a regulated activity that ensures that their utilization is sustainable.
 - D.3.2. No captive wildlife is held, except for properly regulated activities, and living specimens of protected wildlife species are only kept by those authorized and suitably equipped to house and care for them.
 - D.3.3. The business uses native species for landscaping and restoration, and takes measures to avoid the introduction of invasive alien species.
 - D.3.4. The business contributes to the support of biodiversity conservation, including supporting natural protected areas and areas of high biodiversity value.
 - D.3.5. Interactions with wildlife must not produce adverse effects on the viability of populations in the wild; and any disturbance of natural ecosystems is minimized, rehabilitated, and there is a compensatory contribution to conservation management

If the *reglamento* of the General Tourism Law were based on any criteria weaker than these, it would set the bar for sustainability lower than the international private sector has already set for itself. The criteria, however, are merely a beginning. They are intended, as the Preamble states, to “offer governmental, non-governmental, and private sector programs a *starting point* for developing sustainable tourism requirements”²⁴.

Inter-American Development Bank Tourism Sustainability Scorecard

²⁴ GSTC, “Global Sustainable Tourism Criteria,” www.gstcouncil.org.

In 2010, the Inter-American Development Bank (IDB) began using a scorecard to help guide its tourism lending portfolio. It is a practical application of the Global Sustainable Tourism Criteria, and has already been applied by the Structured and Corporate Finance Department to at least three projects. The Scorecard goes beyond the GSTC in that it has a focus on new construction, and considers the cumulative impacts of multiple tourism developments on destinations. It also offers minimum levels to which sustainability criteria must be met, and recognizes projects that go farther. The IDB has made it clear that proposed tourism projects that do not meet minimum requirements as measured by the scorecard will not be considered for financing. This Scorecard should be carefully reviewed as part of the process of setting sustainability criteria for the *reglamento*.



Although the Scorecard has 64 evaluation points and SECTUR should review all of them when considering which criteria to include in the *reglamento* of the General Tourism Law, the Center for Responsible Travel has identified the 18 below as especially relevant for consideration.²⁵

THE PROJECT WILL MAXIMIZE ITS SOCIAL AND ECONOMIC BENEFITS FOR THE LOCAL COMMUNITY WHILE MINIMIZING NEGATIVE IMPACTS.

- The project will present its proposed plans to the local community, these will include the project's scope, location, stages, needs for skilled labor, job opportunities at the project's various stages and in the long-term, as well as how the community can prepare in order to receive the greatest benefit possible from the project's activities.
- The activities of the project will not jeopardize the provision of basic services -- such as water, energy, or sanitation -- to neighboring communities, and if possible, will improve them.
- The project will actively support public, private, and citizens group initiatives to foster the community's social and infrastructure development including, among others, the areas of education, health, sanitation, and housing.
- The project will develop a code of conduct for its activities in indigenous and local traditional communities with the consent of, and in collaboration with the community, as well as in compliance with IDB indigenous policy guidelines.
- Employees will be paid a living wage, and will be provided suitable housing during the construction and operations stages when the project requires their continuous physical presence at the site.

THE PROJECT WILL MAXIMIZE ITS BENEFITS TO CULTURAL HERITAGE AND MINIMIZE NEGATIVE IMPACTS.

- The project contributes to the protection and conservation of local and national heritage, both tangible and intangible, as well as respect for its value.
- The project will not impede access by local residents to beaches, historical, cultural, or spiritually important areas.

²⁵ Inter-American Development Bank, "Tourism Sustainability Scorecard," 2010, <http://www.iadb.org/tourismscorecard/scorecard.cfm?language=spanish>.

THE PROJECT WILL MAXIMIZE ITS BENEFITS TO THE ENVIRONMENT AND MINIMIZE POSSIBLE IMPACTS.

- The project's purchasing policy will favor environmentally friendly products for building materials, capital goods (i.e., those used in the production of commodities), food, and consumables.
- Energy consumption will be reduced to a minimum by means of design and construction features.
- Energy consumption will be measured and sources indicated, including electricity, fossil fuels, and firewood. Measures to decrease overall consumption and document the reduction will be adopted over time.
- Water consumption will be measured, sources indicated, and measures to decrease overall consumption will be adopted.
- Water taken directly from the source for the preparation, construction, and operation of the project will not jeopardize the environmental quality of the aquifer, nor its usefulness and viability in the present and future.
- The project's location, design, construction, and operation will ensure that ecosystems and plant species are used with the least fragmentation possible, and that neither their natural functions nor the environmental roles they play, as well as the goods they provide, are jeopardized.
- The design, construction and operation of marinas and waterways (estuaries, canals, and the like) will not negatively impact aquifers, adjacent ecosystems both aquatic and on land, or natural coastal processes.
- The project will collaborate in biodiversity conservation, including supporting natural protected areas and areas of high biodiversity value.

THE PROJECT WILL MINIMIZE ITS POSSIBLE CUMULATIVE NEGATIVE IMPACTS ON THE TOURISM DESTINATION.

- The projected increase in visitors from this project will not cause total visitor numbers at the destination to exceed the carrying capacity established by local, regional, or national authorities, or that set forth in master plans for tourism zoning.

THE TOURISM PROJECT'S HOUSING AND REAL ESTATE ACTIVITIES WILL NOT PRODUCE NEGATIVE IMPACTS ON THE DESTINATION AND LOCAL COMMUNITY

- The internal rate of return (IRR) of the total project will not depend on real estate transactions for its financial viability. The IRR without real estate transactions will be at least 10%.
- All of the tourism project's real estate sales, transfers, and rentals will be locally registered, and at true market value.

Additional Resources

- Article 42 of the draft *reglamento* calls for "a system of indicators for sustainable tourism management". The UNWTO's 2004 publication *Indicators of Sustainable Development for Tourism Destinations: A Guidebook* is a thorough resource that can be used to establish measurement systems and monitor impacts of tourism. The indicators can be used in combination with the GSTC and IDB Scorecard to establish criteria from the outset, as during the creation of the *reglamento*. Once implemented, they can be used to measure change in the impact of tourism. Good sustainability indicators can

also lead to better decision making and can lower risks and costs. The Guidebook includes advice on how to tailor the indicators to specific destinations, and should receive a careful look by SECTUR during the creation of the *reglamento* of the General Tourism Law. Of the many indicators found in the Guidebook, the Center for Responsible Travel has compiled a list of recommended baseline sustainability indicators that can be found in Annex I. The full Guidebook is available for purchase at www.unwto.org

- Within Mexico, the Proyecto de Norma Mexicana NMX-AA-157-SCFI-2011, “Sustainability requirements and specifications for site selection, design, construction, operation, and abandonment of coastal tourism real estate sites in the Yucatan Peninsula” should be looked at closely for its thorough presentation of sustainable requirements relevant to the development of the *reglamento*.

Conclusion

The 2009 General Tourism Law emphasizes sustainability as one of its core objectives, and calls for that sustainability to be based on some kind of criteria. It is now up to the authors of the *reglamento* of the law to establish those criteria and fill in details on how the law will be implemented. While it’s disappointing that the sustainability criteria in an early draft of the *reglamento* are weak, the fact that the *reglamento* remains incomplete offers an opportunity to ensure that the final draft be based on, and directly incorporate, internationally accepted criteria. The final *reglamento* shouldn’t go so far as to make compliance unachievable, but it should be based squarely on these criteria. The Center for Responsible Travel recommends, therefore, that SECTUR incorporate the GSTC and the IDB’s Tourism Sustainability Scorecard, and that they also look to the UNWTO’s *Indicators of Sustainable Development for Tourism Destinations*, and the Norma Mexicana NMX-AA-157-SCFI-2011 for guidance.

The General Tourism Law’s emphasis on sustainability advances the potential for Mexico to meet its economic goals for tourism while protecting its natural and cultural heritage, but that potential won’t be realized if the *reglamento* doesn’t apply the best criteria available. Applying the good development and management practices associated with the recommended criteria across all of Mexico’s touristic areas will help Mexico become more competitive and sustainable over the long term.

Consumer Demand for Responsible Tourism

Introduction

The National Tourism Accord, in objective number 10 (sustainability) and objective number 5 (competitiveness), moves Mexico in the right direction for capitalizing on long-term trends that favor sustainability among both travelers and tourism investors and financiers.

North American, European and more recently Mexican consumers have been steadily growing more conscientious in their consumption, striving to reduce the negative environmental and social impacts of their purchases from coffee to cars, and, increasingly, in travel. For many, 'green living' has become a way of life that they don't want to leave behind when they go on vacation.

This growing consumer demand for sustainability, as well as the cost savings and risk reductions of sustainable development, is attracting the attention of international public and private investors and lenders. It has also led IMCO to include sustainable management of resources as one of ten factors that determine a destination's competitiveness -- defined as "the capacity of a country to attract and retain investment and talent."²⁶

This section examines the trends among consumers and the financial sector that Mexico will need to take advantage of in order to achieve its ambitious growth objectives under the National Accord.

Current Demand and Future Trends

In 2001, the UNWTO's predictions for tourism trends over the coming two decades forecast that "experiential" tourism (which encompasses ecotourism, nature, heritage, cultural, soft adventure tourism, rural and community tourism) was among the sectors expected to grow most quickly during the coming decades, while sun-and-sand resort tourism, for decades the staple of Caribbean tourism, had "matured as a market" and its growth was projected to remain flat.²⁷ A decade later, the UNWTO's predictions appear to have been correct. Demand for responsible travel is up, and strong relative to conventional tourism, and several long-term trends continue to work in its favor.²⁸ A variety of market studies over the past ten years have documented sustained interest among consumers in tourism products and services that preserve the environment and respect local cultures:

- 96% of those who read *Conde Nast Traveler* (a popular English language travel magazine with a luxury angle) believe that hotels and resorts should be responsible for protecting the environment.²⁹

²⁶ Instituto Mexicano para la Competitividad A.C., www.imco.org.mx.

²⁷ UNWTO, "Global Forecasts and Profits of Market Segments," *Tourism 2020 Vision*, vol. 7, Madrid: UNWTO, 2001.

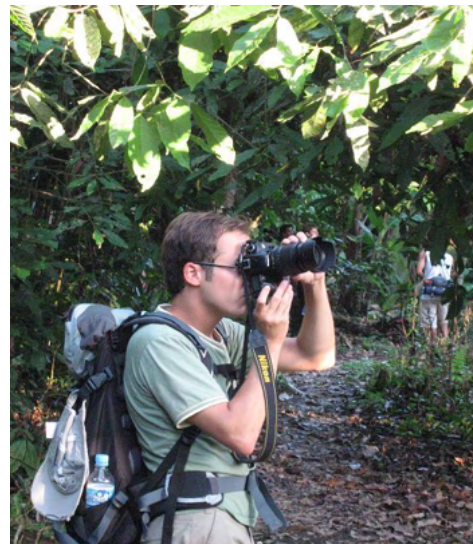
²⁸ CREST on behalf of SNV (Netherlands Development Organization), "Market for Responsible Tourism Products in Latin America and Nepal", 2009, <http://www.responsibletravel.org/resources/documents/reports/The%20Market%20for%20Responsible%20Tourism%20Products.pdf>.

²⁹ Dorinda Elliott, "Ethical Traveler Index," *Conde Nast Traveler*, May 2007.

- According to the World Travel and Tourism Council (WTTC), a global tourism industry group, more than 66% of all American and Australian tourists, and 90% of British travelers consider active protection of the environment, including support of local communities, to be part of a hotel's responsibility.³⁰
- 74% of *Conde Nast Traveler* readers indicate that corporate responsibility policies influence their purchasing decision,³¹ and 44% of all US consumers consider environmental impact to be important when planning travel.³²
- 43% of people in the U.S. who identify themselves as at least "eco-conscious" are willing to pay a 5% premium for responsible travel, and 40% are willing to pay up to 10% more.³³

Travelers interested in responsible vacations have demonstrated their dedication to sustainability even through difficult economic times. When the market research group CMI asked responsible travelers how the global economic crisis would affect their travel plans, 60% said they would maintain their level of 'green' purchasing, and 30% said they planned to increase responsible purchases.³⁴

Evidence suggests that survey respondents have gone beyond ticking a box on a questionnaire, and have continued to patronize responsible tourism businesses in hard times. The CMI survey found that 54% of respondents said that they took a "greener" vacation within the last 12 months.³⁵ Anecdotal evidence supports these findings. In early 2009, at the peak of the global economic crisis, one U.S. tour operator who specializes in responsible travel said, "I've got all the business I can handle right now. My clients are really dedicated."³⁶ And in Belize, a coastal eco-resort reported that their business had slowed only 5% while their conventional tourism neighbors were down 20%.³⁷



A dedicated responsible traveler in Chiapas
Credit: CREST

In Mexico, 'green' consumerism is slowly catching on. Statistics specifically on Mexican demand for responsible tourism are scarce, however, there is evidence that 'green' consumerism is catching on. TNS Research International found, for instance, that 42% of Mexican consumers say that environmental sustainability holds significant influence on their purchasing decisions when it

³⁰ World Travel and Tourism Council, "Travel & Tourism Economic Impact," 2010.

³¹ Elliott, "Ethical Traveler Index.."

³² PhoCusWright, "Going Green: the Business Impact of Environmental Awareness on Travel," 2009.

³³ CMI Community Marketing Inc., "Green Traveler Survey," 2010.

³⁴ CMI, "Green Traveler Survey."

³⁵ CMI, "Green Traveler Survey," p. 5.

³⁶ CREST, "Market for Responsible Tourism Products."

³⁷ CREST, "Market for Responsible Tourism Products."

comes to food,³⁸ a general indicator of sustainable preferences. And according to IntraEmprendador, “If you are considering opening a business, or exploring new markets, you must think ‘Green.’ The emerging trend at the global level, and in Mexico, is to offer sustainable products and services.”³⁹

These figures paint a promising picture for sustainable tourism products today, and a confluence of trends identified by CREST⁴⁰ suggest demand for sustainable travel will remain strong:

- a) **Generational shifts** - The “Baby Boom” generation (those born between 1946 – 1964) are entering retirement and are finding themselves with more leisure time. There are, for example, almost 80 million Baby Boomers in the United States. They control 70-80% of the wealth, live longer, value more active lifestyles including long-haul travel, and are increasingly aware of environmental issues. In addition, the “Gen-Xers” (the generation born between 1961 – 1981) are environmentally conscious and have embraced conscientious consumerism or “spending your way to a greener planet.” “Millennials” (children of Baby Boomers born from the early 1980s to 2001) are generally extremely well informed and passionate about environmental and social justice issues. Each generation influences the others and together they are driving demand for responsible tourism.
- b) **Urbanization** – The cities of the world, including those in North America and Europe, are growing quickly as more and more people migrate from rural areas in search of employment. This is also leading to greater stresses: urban densities, increased traffic, air and noise pollution, and loss of green space. Urban workers spend increasing amounts of time in artificial environments -- air-conditioned office buildings, personal cars, high-rise apartments, and in front of computer screens, and wireless devices and this adds greatly to the stress of city-dwelling. They seek to re-connect with nature (trend “c” below).
- c) **Need to connect with nature** - In response to trend “b”, urban workers are seeking to spend their leisure time in areas where they can ‘reconnect with nature’. Hiking, camping, wildlife viewing, snorkeling and SCUBA holidays (all trending upward) offer a chance to escape from urban environments and busy work lives. Some urbanites, particularly younger ones, turn to active outdoor adventure travel such as whitewater rafting, mountain biking, climbing, and skiing/snowboarding to meet the need to reconnect with nature while maintaining their fast-paced lifestyle.
- d) **Emergence of experiential tourism** - The term Experience Economy first emerged as the title of a book written in 1999 by Pine and Gilmore. In it they describe the experience economy as the next economy following the agrarian economy, the industrial economy, and the most recent service economy. Businesses increasingly orchestrate memorable events for their customers, they argue, and that memory itself becomes the product - the “experience”. Modern consumers now seek these experiences as part of their habitual consumption patterns, and this is helping drive the growth of experiential tourism -- which encompasses responsible tourism product segments that tend to stress

³⁸ IntraEmprendador.com, “Cinco tendencias verdes para emprender en México,” May 12, 2011.

³⁹ IntraEmprendador.com, “Cinco tendencias.”

⁴⁰ CREST, “Market for Responsible Tourism Products,” pp. 25-27.

experiences over amenities. The UNWTO ranks “experiential tourism” among the sectors expected to grow most quickly over the next two decades.⁴¹

- e) **Demand for authenticity** - Modern consumers want authentic experiences.⁴² Contrived experiences created by tourism operators, theme parks, cruise lines, resorts, and so on that are based largely around consumption – shopping, gambling, etc. – and manufactured or mass produced entertainment are no longer favored by a growing number of travelers. Rather, consumers want to see the real thing and are savvy enough to easily tell the difference.
- f) **Going green** - Consumer demand is on the rise for products that are seen as “organic”, “sustainable”, “environmentally friendly”, “green”, “fair trade”, or any other of several buzz words that imply care for the environment. A non-profit research group called Lifestyles Of Health And Sustainability (“LOHAS”) found that in the United States, consumers who are focused on health and fitness, the environment, personal development, sustainable living and social justice (known as conscientious consumers) number 41 million people, or 19% of U.S. adults.⁴³
- g) **Search for fulfillment** - A final trend, the search for personal growth and fulfillment, is combining with the others listed here to drive demand for responsible tourism products. As Baby Boomers, Gen-Xers, and Millennials or Gen-Yers seek authentic, ‘green’ experiences as an escape from the stress of urban life, they are also increasingly searching for deeper meaning in their vacation experiences. Some responsible tour operators are capitalizing on this impulse by offering a chance to give back, either through financial support for local projects, or through volunteer opportunities. Opportunities for personal growth and fulfillment are a value-added component of leisure holidays, and responsible tourism is growing as providers recognize this growing demand.

“Green is no longer just a trend,” says Fran Brasseur, executive director of the Hotel Sales and Marketing Association International (HSMIA) Foundation, “it’s a way of life.”⁴⁴

Financial Sector’s Interest in Sustainable Tourism

In the current economic climate, securing investors and financiers for tourism development has not been easy. But an increasing number of public and private institutions are, at some level, screening their investments and loans through a sustainability lens. New resorts and attractions that incorporate sustainable design, construction, and operations may have access to these sources of capital where conventional projects would not.

From the **public sector**, the clearest example is the Inter-American Development Bank and their use of the Tourism Sustainability Scorecard (see Reglamento de la Ley General de Turismo section for details). The Scorecard has been used by the Structured and Corporate Finance (SCF) Department, which gives private sector loans upwards of \$10 million, to screen for and

⁴¹ UNWTO, “Global Forecasts,” *Tourism 2020 Vision*, p. 7.

⁴² World Travel Market, “Global Trends Report,” 2008, p. 12.

⁴³ LOHAS, <http://www.lohas.com/about>.

⁴⁴ Responsible Travel Report, “STI Partners with PhoCusWright and HSMIA Foundation,” April 2008.

eventually approve the LEED Financing Facility for the construction of green hotels in Central America, Mexico and the Caribbean. The LEED Financing Facility has “up to \$42 million in long-term IDB loans to finance up to eight Marriott hotels to be developed by Caribe Hospitality S.A. in Costa Rica, Nicaragua, Guatemala, Panama, Jamaica, Trinidad and Tobago, and Mexico that will meet world-class environmental and sustainability standards.”⁴⁵ An \$18.5 million loan for an 80 room Ritz Carlton Hotel in Panama, and a \$52 million loan for a 110 room Four Seasons in Barbados also appear to have passed initial IDB sustainability screening⁴⁶

The International Finance Corporation (IFC) also now uses sustainability criteria in its tourism investment portfolio. This member of the World Bank Group has invested over \$2 billion in 220 hotel projects since 1956. Their investments in the hotel sector “span the globe, supporting city center and airport hotels that contribute to business infrastructure, as well as tourist hotels and resorts, including eco-tourism and all-inclusive properties.” They also “support historic and environmental preservation tourism projects that encourage redevelopment of historic buildings and preservation of historic sites.”⁴⁷

Other public sector institutions with a mandate and process for sustainable investing, as well as past investments in tourism, include the various agencies of the United Nations (UNWTO, UNEP, UNDP, UNESCO, UNCTAD) and the United Nations Foundation. National development agencies like USAID, l’Agence Francaise de Developpement, GTZ, SNV Netherlands Development Corporation, and the governments of Spain and Japan have all been active in tourism development and give priority to projects that emphasize sustainability.

Some public sector funds are very specialized with an emphasis on green energy, climate change, or poverty alleviation, for example; and, they will only fund tourism projects that meet their particular objectives or geographic focus. These institutions are offering investment equity and/or loans, and they vary widely in the amount they’ll fund: some focus on private sector projects under \$250,000, while others will only fund projects over \$5 million. Tourism is a more recent area of interest for many of the institutions, but lending and investing in the sector is growing, and is increasingly being recognized for its importance to developing countries.⁴⁸

With regards to **private capital**, the main concern of investors has traditionally been the potential “return on investment” which has been based on conventional data that does not take into account sustainability factors. But in the private sector, as well as the public, there is a growing acceptance of the importance of sustainability and recognition of its potential value among private investors and financial institutions. Many of the leading investors and advisors have embraced sustainable and socially responsible investing, as reflected in the amount of capital now invested based on those principles.

Known as “social investors,” these individuals or groups seek out investment opportunities that provide a positive social or environmental yield as well as a good return on investment. This

⁴⁵ IDB News Release, “IDB launches LEED Financing Facility,” December 14, 2010, <http://www.iadb.org/en/news/news-releases/2010-12-14/idb-green-hotels-in-central-america-mexico-and-the-caribbean,8845.html>.

⁴⁶ IDB, “BA-L1027: Four Seasons Barbados,” <http://www.iadb.org/en/projects/project,1303.html?id=BA-L1027>.

⁴⁷ International Finance Corporation, “Tourism Overview,” http://www.ifc.org/ifcext/gms.nsf/Content/Tourism_Overview.

⁴⁸ Research conducted by CREST for the UNEP’s Sustainable Investment and Finance of Tourism (SIFT) project and for specific tourism projects, 2009-2011.

type of investing is generally referred to as socially responsible investing (SRI) and it now plays a significant role in the world of private investment. Today, SRI encompasses an estimated \$2.71 trillion out of \$25.1 trillion in the U.S. investment marketplace.⁴⁹ The universe of socially responsible investment within the private sector includes a wide range of investor types: individuals, banks, corporations, hedge funds, mutual funds, public and private pension funds, universities, hospitals, foundations, insurance companies, non-profit organizations and religious institutions. Additionally, the successful growth of this brand of investor can be seen in the development of several social investment organizations and associations across Europe and North America.

Private investors and the companies and organizations that support them have developed a number of models and tools designed to increase their ability to effectively identify and assess sustainability within companies and projects. These include:

- **Screening** – evaluating investment portfolios or mutual funds based on social environmental and corporate governance criteria. This may involve including strong corporate social responsibility performers, avoiding poor performers, or otherwise incorporating CSR factors into investment analysis.
- **Exclusions** – excluding companies from portfolios based on their involvement in undesirable industries such as arms trading, gambling, or for breaches of worker rights or pollution laws.
- **Indexes** – groups of publicly traded companies based on systematic corporate sustainability assessments and criteria. Leading sustainability indexes include: Dow Jones Sustainability Indexes, ASPI Index (Advanced Sustainable Performance Indices), FTSE4GOOD, ECPI Ethical Indices: ECPI Ethical Index Global, ECPI Ethical Index Euro, ECPI Ethical Euro Tradable and ECPI Ethical Index, Calvert Social Index (CALVIN).
- **Equator principals** – a set of environmental and social benchmarks used by private banks and financial institutions for managing environmental and social issues in international development project finance. The Preamble states that the signatories “have adopted these Principles in order to ensure that the projects we finance are developed in a manner that is socially responsible and reflect sound environmental management practices. By doing so, negative impacts on project-affected ecosystems and communities should be avoided ... We believe that adoption of and adherence to these Principles offers significant benefits to ourselves, our borrowers and local stakeholders.” The 73 signatories to the principals include large and well-known banks such as ABN Amoro, Banco do Brasil, Banco Santander, Bank of America, Barclays, Citigroup, Credit Suisse, HSBC, JPMorgan chase, Lloyds, and Wells Fargo.

A 2009 project of the United Nations Environmental Program identified nearly one hundred private institutions involved in sustainable finance of tourism at some level.⁵⁰ As sustainability principals continue to permeate the finance sector, the number of sustainable tourism investors and the size of their collective portfolio is poised to grow.

⁴⁹ Social Investment Forum, <http://www.socialinvest.org>.

⁵⁰ United Nations Environment Programme, “Sustainable Investment and Finance of Tourism (SIFT) Network Concept Paper,” 2009. Concept paper and business plan prepared by CREST.

Case Study: The Willard InterContinental Hotel, Washington, DC

This landmark 332 room luxury hotel located across from the White House has successfully taken advantage of access to 'green' capital finance in order to capture over \$1 million in new revenue over one year. At the request of the passionate General Manager, Hervé Houdré, joint owners IHG (the largest global hotel brand today), the Oliver Carr Company, and Golding Associates, invested in ten sustainability measures beginning in 2004 designed to reduce operating costs and attract new conscientious guests:

- i. Conversion to compact florescent light bulbs, such that the hotel operates on 95% CFL lighting.
- ii. 100% Wind Power through the purchase of REC's (Renewable Energy Certificates)
- iii. Clean-up and beautification of nearby Pershing Park
- iv. Waste reduction
- v. ISO 14001, LEED EB and 22000 Certifications
- vi. Sustainable food and beverage offerings, no endangered fish species are served
- vii. Improve environmentally friendly hotel room concept in a city hotel
- viii. Reduction of paper consumption, with all paper used having 30% recycled content
- ix. Increase green cleaning products purchasing
- x. Support the National Park Foundation planting of Cherry trees in Washington, DC



*Willard InterContinental Hotel, Washington DC,
Credit: washington.intercontinental.com*

A no-cost initiative of the hotel has been its travelers' philanthropy program, in which guests are encouraged to contribute between one and five dollars per day to community projects upon checking in. Approximately 70% of guests opt into the program. The hotel has also taken the extraordinary step to calculate the total amount in cost savings from the towel and linen re-use program, and to donate an equivalent amount to watershed protection of a nearby, polluted river.

Based on these achievements, The Willard won the 2009 *Condé Nast Traveler World Savers* award in the City Hotel category. These awards are given to companies that demonstrate leadership in five categories: poverty alleviation, cultural and environmental preservation, education, wildlife conservation, and health.⁵¹ The Willard Hotel was recognized for several accomplishments including its use of 100% wind power, commitment to composting and recycling, donations to water well initiatives in South Africa and South Dakota, and the building of a Washington, DC Habitat for Humanity House.

⁵¹ Global Hoteliers' Community, "InterContinental Wins Condé Nast Traveler 2009 World Savers Award," <http://ehotelier.com/hospitality-news/item.php?id=P16987>.

Furthermore, a new round of twelve sustainability initiatives was financed beginning in 2009 through an innovative partnership with Johnson Controls⁵², in which Johnson Controls identifies efficiency solutions to retrofit the building, and finances the purchase and installation of the efficient technologies through a third-party bank.



Loans for upfront investments are repaid through carefully measured savings in utility bills. Johnson Controls guarantees the efficiencies by agreeing to repay the loan at their loss if the recommended technology investments do not yield the required savings. In other words, from the owner's perspective, there is no cost and no risk to purchase and install the new technology, only a delay in the savings that can be realized. This innovative financing model makes the decision to move forward with large investments in efficiency very easy for the owners. Two other companies involved in providing this type of sustainability financing are Honeywell and Siemens.

These major capital investments in sustainability financed by Johnson Controls include:

- New thermostats in all the rooms with sensors that sense if people are present and adjust the temperature accordingly.
- The purchase of an on-site gas micro-turbine, which produces electricity during peak hours. Gas being cheaper than electricity, the hotel will consume more gas, but the electricity bill will go down.
- Window replacement throughout the property to high energy efficient windows. Because the expense of new windows is so great, the payback timetable on efficient windows is long. As a result, Johnson Controls is only financing 25% of the total cost.

There was almost no resistance to the sustainability initiatives, as the management team adopted it quickly and thoroughly and took ownership and pride in implementing the steps. The hardest part has been educating the line staff to understand that the actions they are instructed to take are making a difference for the environment and community. "I've learned that it is important to show pictures of the benefits of the initiative to our staff to help keep them engaged," said Houdré.

The efforts have been highly successful both in reducing costs and driving new business. In 2009, the Willard documented over \$1,000,000 of *new* business as a direct result of its sustainability initiatives, as guests, meeting planners, and wedding parties choose the hotel expressly for its greening initiatives.

⁵²Johnson Controls, "Systems Integration,"

http://www.johnsoncontrols.com/publish/us/en/products/building_efficiency/building_management/systems_integration.html.

Site Selection

Introduction

Establishing the location of new tourism construction is the development decision with the greatest environmental and social impact. The operating practices of the lodging and tourism attractions, no matter how 'green' they may be, are of little consequence if valuable habitat was razed during construction. Under the CIP (Integrally Planned Tourism Center) model, FONATUR plays a critical role in determining where private sector developers will site their tourism projects. Like private tourism developers, FONATUR must be certain that the location is commercially suitable and the development complies with national and local regulations. As a government agency, however, FONATUR has a broader responsibility to choose sites that ensure the tourism project will be socially and environmentally sustainable into the future.

Unfortunately, FONATUR (with SEMARNAT's approval) has often chosen coastal locations where large scale tourism development has caused environmental and social damage. The first five CIPs (Cancún, Los Cabos, Ixtapa, Loreto, Huatulco) were selected before many of the internationally recognized good practices for sustainability had emerged. The sites were viewed as blank slates with natural beauty and without significant existing populations, so scant care was taken to protect fragile ecosystems. Cancún is located on naturally wide beautiful white sandy beaches, turquoise waters, an abundance of coral, and a lagoon that is home to a wide variety of indigenous species. "The resulting tourist industry," states a study on coastal development, "extensively damaged the lagoon, obliterated sand dunes, led to the [local] extinction of varying species of animals and fish, and destroyed the rainforest that surrounds Cancún."⁵³ Another study found that the scale of development also damaged Cancun's underground water systems.⁵⁴ FONATUR's mega-resort development in Huatulco "accelerated the process of social and spatial polarization, impoverishing the native populations and raising tensions throughout the region."⁵⁵



Aerial View of Cancun

Credit: Bruce Clarke

A number of FONATUR's recent developments are described in documents and press releases as "sustainable" and "environmentally responsible,"⁵⁶ but the development decision that most impacts a project's sustainability, the site selection, was not done in accordance with international good practice. Cabo Cortes and CIP Costa Pacifico (Playa Espiritu), for instance, are

⁵³ Kama Dean and Chris Pesenti, "Sustainable Coastal Development: La Escalera Náutica: A Mega-tourism Project on the Baja California Peninsula, A Briefing Book," Pro Peninsula, San Diego, CA, February 2003, p. 10.

⁵⁴ Granel E. *et. al.*, "Deterioro de de calidad de agua subterránea por el desarrollo poblacional: Cancún, Q. Roo." *Ingeniería*, 6-3, 2002, pp. 41-53.

⁵⁵ David Barkin and Carlos Paillés. "NGO-Community Collaboration for Ecotourism: A Strategy for Sustainable Regional Development," *Tourism Recreation Review*, No. 2, 1999, <http://www.kiskeyaalternative.org/cangonet/cangonet99/0021.html>.

⁵⁶ FONATUR Comunicado de Prensa No. 21/2010, www.fonatur.mx/es/comunicacion/index.asp?aa=2010,

located where they threaten sensitive ecosystems including coral reefs and wetlands. In order to comply with good practices in site selection, FONATUR – and private developers -- should carefully weigh the following six factors: (1) commercial suitability of the site (2) going beyond legal compliance (3) appropriate scale of proposed development (4) natural heritage and environmental value of land (5) social context and cultural heritage of proposed site, and (6) unintended consequences of land use change. These good practices have been identified by international lending institutions such as the Inter-American Development Bank, the World Bank's International Finance Corporation, and the 72 signatories to the Equator Principals, as critical to ensuring that site selection contributes to long term sustainability.⁵⁷

1) Commercial viability

Economic sustainability that generates benefits for owners and the local community is a critical part of the triple bottom line. Commercial viability depends on, among other things, the site's ability to draw visitors and keep them over the long term, and this, in turn, is based on three important factors: the site's own natural characteristics, access to sufficient fresh water and other resources in consideration of projected growth and -- particularly important in recent years -- safety and security in the locale.

2) Beyond Legal Compliance

The site selected for any new development must, at a minimum, fully comply with federal, state, and local regulations.⁵⁸ However, just because a development didn't break any laws when it was constructed, doesn't mean that it is an example of sustainable site selection and construction. Good practice in sustainable development dictates that investors and developers exceed minimal legal requirements. As the Urban Land Institute's *Ten Principals of Coastal Development* states: "Exceeding state and local citing requirements is a good practice."⁵⁹

3) Scale

While it is recognized that, given land prices and other factors, there is pressure to build large tourism developments along coastlines, policymakers and developers must assure an appropriate match between the site's size and topography and the scale of the project. Several of FONATUR's coastal CIPs —Cancún and Los Cabos for example -- are located in environmentally sensitive areas yet they include thousands of hotel rooms and some buildings over 20 stories tall. This scale of development can ruin the site's natural assets and lessen its tourism value. Rutes, Penner and Adams, in their book, *Hotel Design: Planning and Development*, state, "Large volumes of visitors and the infrastructure needed to support them can overwhelm natural systems, stamp out wildlife and leave a lasting visual impact that is unappealing to modern tastes."⁶⁰ Tourism that is too big for the site can also overwhelm communities, alter the look and feel of the place, disrupt traditional

⁵⁷ IDB, "Tourism Sustainability Scorecard"; International Finance Corporation, "IFC's Sustainability Framework," <http://www.ifc.org/ifcext/policyreview.nsf>; Equator Principals, <http://www.equator-principles.com/>.

⁵⁸ GSTC, *Global Sustainable Tourism Criteria*, criteria A.2.

⁵⁹ Michael Pawlukiewicz, Prema Katari Gupta, and Carl Koelbel, Urban Land Institute, *Ten Principals of Coastal Development*, 2007, p. 15.

⁶⁰ Walter Rutes, Richard Penner, and Lawrence Adams, *Hotel Design: Planning and Development*, W.W. Norton & Company, New York, 2001, p. 240.

lifestyles, and drive out the local people who helped to make the site attractive for tourism in the first place.

Throughout the planning, zoning, and permitting stages, a balance must be struck that allows for developments big enough to create needed jobs and revenue, but not so big they sacrifice the natural and cultural heritage of the original site. By definition, sustainable development means “meeting the needs of the present without sacrificing the ability of future generations to meet their own needs.”⁶¹

4) Environmental Significance

The environmental condition of the land and surrounding waterways must also be weighed during the site selection and permitting processes. Even though FONATUR may be able to obtain permits to build on a given site in compliance with existing local or federal regulations, international good practice in sustainable tourism development holds that intact high biodiversity habitat is not suitable for construction; neither is degraded land adjacent to natural areas or areas that serve as corridors for migrating wildlife.⁶² The Convention on Biological Diversity (CBD), to which Mexico is a signatory, has delineated the importance of buffer zones and corridors as critical to a broad



Marismas Nacionales
Credit: Santiago Gibert/WWF

“Ecosystem Approach” to conservation. As the CBD Secretariat states, “At the heart of the approach is the awareness that without the effective management of ecosystems there can be no economic development that generates sustainable human and social welfare. Equally, without the full engagement of diverse sectors in the economy in the management of ecosystems, there can be no effective biodiversity conservation.”⁶³ By choosing to build a massive tourism development so near to Marismas Nacionales’ Ramsar wetland site, FONATUR is in violation of the Ecosystem Approach to conservation recognized by the CBD as an international good practice. A Ramsar investigative mission that toured the site concluded that “given the ecological importance of the area for the Mexican state and the international community for being a wetland as well as its importance for coastal management, the pressures and vulnerability on the Huizache-Caimanero ecosystem are too great, and the construction of a tourism development of such magnitude and density as designed by FONATUR is not viable.”⁶⁴

⁶¹ United Nations, *Brundtland Commission*, March 20, 1987, <http://www.un-documents.net/ocf-02.htm>

⁶² Aaron Bruner, Jamie Sweeting and Amy Rosenfeld, *The Green Host Effect: An Integrated Approach to Sustainable Tourism and Resort Development*, Conservation International, 1999, http://nsgl.gso.uri.edu/washu/washuw99003/7-Bruner_et_al.pdf.

⁶³ Graham Bennett and Kalemani Jo Mulongoy, Secretariat for the Convention on Biological Diversity (CBD), *Review of Experience with Ecological Networks, Corridors and Buffer Zone*, March, 2006, p 8.

⁶⁴ Milenio Online, “Ramsar pide no aprobar megadesarrollo de Fonatur,” 15 diciembre 2010, <http://impreso.milenio.com/node/8881621>.

Instead, land use planners and developers should seek to minimize disruption of the ecosystem by assessing the environmental condition of the entire site, not simply the construction area. SEMARNAT, as the regulating agency, needs to provide detailed, unbiased assessments that avoid succumbing to political and economic pressures.

According to *the Guide on Planning, Design, and Sustainable Construction in the Mexican Caribbean* produced by the Meso American Reef Tourism Initiative (MARTI), the planning phase should include an assessment of environmental elements such as geography, hydrology, and biology, as well as economic activity and social and cultural heritage. By taking the time to understand the natural processes of the ecosystem, FONATUR and private developers can avoid the need for costly ecosystem modifications after structures are built and can take advantage of wind, shade, gravity, water sources, and local vegetation.⁶⁵ Measuring the environmental significance of the development site also will identify species of flora and fauna protected under Mexican Official Standards (NOM), NOM-059-ECOL-2001, and NOM-022-SEMARNAT- 2003.⁶⁶ Ensuring the continued protection of the plants and animals listed in the Standards is a critical function of government and an element of sustainable tourism.

Good Environmental Practices for Site Selection:

The following good practices for environmental conservation in tourism site selection have been developed by international public institutions like the United Nations World Tourism Organization (UNWTO) and the Inter-American Development Bank, as well as Mexican state institutions like the Dirección de Planeación Urbana y Ecología Baja California Sur; associations of leading tourism businesses such as the Global Sustainable Tourism Council (GSTC) and International Tourism Partnership; and civil society groups including the Urban Land Institute, US Green Building Council, Mesoamerican Reef Tourism Initiative, World Wildlife Fund, and Conservation International:⁶⁷

- Do not choose building sites for projects larger than 30 rooms in or adjacent to high biodiversity areas or biological corridors. Siting new construction in these areas disqualifies the project from legitimate consideration as “sustainable”.
- Build on previously developed or degraded or urban land whenever feasible. At a minimum, developers should search for the availability of such sites before acquiring pristine land. More fully, developers should demonstrate that no other previously developed place can serve as an adequate site for a proposed new construction project in an otherwise unaltered spot.

⁶⁵ Jonathan Edwards, “Visitor Management and the Sustainable Tourism Agenda,” in *Sustainable Tourism in Islands and Small States: Issues and Policies*, edited by Lino Briguglio, et al., Pinter, London, 1996, pp. 137-147.

⁶⁶ MesoAmerican Reef Tourism Initiative (MARTI), *Guía de Planeación, Diseño y Construcción Sustentable en el Caribe Mexicano*, 2011, www.guamarti.org.

⁶⁷ Adopted from MARTI, “Sustentabilidad = Planeacion + Diseno + Construccion: Guia de Planeacion, Diseno y Construccion sustentable en el Caribe Mexicano,” 2011; International Business Leaders Forum and Conservation International, *Sustainable Hotel Siting, Design and Construction*, 2005.; UNWTO, *Indicators of Sustainable Development for Tourism Destinations: A Guidebook*, 2004; Dirección de Planeación Urbana y Ecología Baja California Sur and Sherwood Design Engineers, *Guía del Desarrollador Para el Desarrollo Costero Sustentable en Baja California Sur*, Loreto Bay Foundation, 2009.; US Green Building Council, *LEED 2009 for New Construction and Major Renovations*, 2009.

- Narrow areas of shoreline that are backed by a lagoon-wetland system are usually not appropriate for development. All buildings should be at least 30 meters away from wetlands and 15 meters from any water body.
- Provide ample buffer zones with no development on the beach, dunes, coastal wetlands or other natural areas on site. Mexico's Federal Marine Zone (ZFMT) of 20 meters from the high tide line is often insufficient and, following the principal of "beyond compliance", structures should be located farther away from shore and setbacks determined on a site-by-site basis with the ZFMT as a minimum. It is also important to preserve public access to beaches.
- Preserve coastal dunes by building well inland, not on top or in front of dunes. Roads and parking lots should be well away from dune areas. Avoid constructing rigid structures on the beach or face of dunes. Place only modest or temporary structures in the buffer zone.
- Locate structures away from mangrove and wetland areas. Avoid locations that would require wetlands filling or wetlands deforestation. Ensure that any roads can be built on areas of higher elevation, and any access can be raised to permit the free exchange of water.
- Structures that will require nighttime illumination should be located away from beaches where turtles may nest and where unavoidable, light dimming techniques should be employed.
- Choose sites suitable for alternative power generation (solar, wind, geothermal).
- Choose sites with access to public transportation, or if none is available, developers should ensure the creation of access to public transit is part of the development plan.
- Choose sites with access to housing for construction workers and employees. If construction of employee housing is required, this site should be selected according to the same environmental good practices as the tourism facilities, and in consideration of non-point-source pollution potential.
- Site according to bioclimatic architecture practices to the extent possible, given topography, view requirements and reasonable cost expectations. Such practices include:
 - taking advantage of natural wind patterns to cool buildings and reduce the demand for air conditioning.
 - positioning buildings to reduce solar heat gain and taking advantage of any shade coverage from trees or maximizing natural illumination to further reduce energy demand.
- Irreplaceable agricultural land should be preserved from development, including primary and unique agricultural soil. New developments should be located in places that have no more than 25% primary or unique soils. This good practice highlights the importance of zoning, building permitting, and design guideline standards as important enforcement tools.
- New developments covering areas larger than 2 hectares should acquire land set-asides known as conservation easements that put privately owned intact habitat into preservation status equivalent to at least 50% of the total surface area of the project in order to protect that land from development in perpetuity.
- Ensure there are sufficient fresh water and other resources for both the tourism project and the local community, including its commercial, agricultural, and civic activities. Consideration must be given to the increased demand that will be placed on existing water and energy supplies as well as waste and sewage disposal facilities needed to service *both new visitors and new workers and their families*. Desalination plants must

properly address the environmental threats posed by the production and release of brine byproduct. Furthermore, water and energy plans must take into account the effects of global climate change as rain patterns are expected to shift. As Mexico works toward its commitment of reducing CO2 emissions by 50% by 2050,⁶⁸ site selection for new construction must also consider accessibility to renewable energy sources like solar, wind, and geothermal.

5) Cultural Heritage and Social Context

Tourism projects and their visitors inevitably impact the surrounding community. It is the responsibility of FONATUR and private developers to consult with the community to mitigate negative impacts and to maximize the development's benefits to and acceptance by the surrounding community. If community members are not involved early on, important considerations may be overlooked and these could be costly to address at a later stage. Establishing a



Indigenous Tourism Workshop

Credit: CREST

participatory planning process involving ongoing dialogue with local stakeholders is a critical component to building successful and sustainable tourism enterprises.⁶⁹

The UNWTO's Global Code of Ethics for Tourism states that tourism professionals, particularly investors, "should deliver, with the greatest transparency and objectivity, information on their future programs and their foreseeable repercussions and foster dialogue with the [local] populations concerned."⁷⁰

If the consensus is that the tourism development is not wanted, or that the proposed plans are not in line with the desires of the community, FONATUR should be prepared to modify its plans or search for alternate sites.

Good Social and Cultural Practices for Site Selection:⁷¹

Stakeholder involvement is a critical and often ignored component of tourism (and real estate) development. Although market timing and financing issues will be viewed by some as precluding the best practices outlined below, government agencies and private developers would be wise to apply them whenever possible.

- Undertake a participatory planning process with comprehensive stakeholder dialogue. Create mechanisms and opportunities (including face-to-face meetings with community

⁶⁸ Comisión Intersecretarial de Cambio Climático, "Programa Especial de Cambio Climático 2009-2012 – DOF 28/08/2009," publicado en *el Diario Oficial de la Federación* 28 de agosto 2009.

⁶⁹ International Business Leaders Forum and Conservation International, *Sustainable Hotel Siting, Design and Construction*, 2005, p. 27.

⁷⁰ UNWTO, *Global Code of Ethics for Tourism*, 2001, p. 5.

⁷¹ Adopted from *Sustainable Hotel Siting, Design and Construction*, 2005; UNWTO, *Indicators of Sustainable Development for Tourism Destinations: A Guidebook*, 2004; *Guía del Desarrollador*, 2009.

leaders and public forums) that go beyond the minimal requirements of the permitting process.

- Discuss the potential effects of the tourism development on the local economy and the dynamic of the local community, such as its cultural heritage and traditional activities.
- Never build on land deemed sacred by local indigenous communities.
- Anticipate and avoid issues which will be opposed by community members such as relocation of homes, impacts of noise during construction and operations, waste, and water consumption and contamination. These concerns must be properly addressed with the community before construction begins.
- Be open, honest and transparent in communication with all parties and avoid creating unrealistic expectations.
- Involve residents both as participants and beneficiaries. Consider the opportunities for ownership by community members or the community as a whole of all or part of the project, as is being done by the Korian Real Estate group near Mazatlan.
- Those involved in site selection must be prepared to pay fair compensation for land that reflects intended use (i.e. paying ejideros prices that reflect tourism development values).
- Sites should be selected where adequate staff housing is already located within a reasonable distance from a property, or where new staff housing can be built with minimal environmental damage.
- Understand the community's needs and ensure that primary resources and services (i.e. water, energy and waste management) will be adequate to service the tourism development without encroaching upon the needs of the community. Explore opportunities for helping to establish facilities that can be shared by the community, for example, waste water treatment plants and recycling facilities. Development fees would be an appropriate tool in this case.
- Finally, sites need to be accessible to visitors. An industry rule of thumb for viable tourism developments that appeal to the international market is that they must be located no more than a two hour drive from the nearest international airport. Good practice dictates that new sites be accessible by road and highways as well as public transportation such as train and bus. According to the UNWTO, sites should also be accessible, or made accessible, to persons with disabilities. UNWTO Secretary-General, Taleb Rifai recently declared that "the facilitation of tourist travel for persons with disabilities is a central part of responsible and sustainable tourism."⁷²

6) A More Accurate Environmental Impact Assessment and Cost-benefit Analysis

One problem with the current zoning and permitting process in Mexico is that the Environmental Impact Assessment (EIA) only applies to the land within the borders of the specified lot. The true environmental impacts of large coastal developments, however, occur well beyond the perimeter of the property as well. A true economic, environmental, and/or social impact analysis will begin by calculating the appropriate "market area" for analysis; this should include the entire area deemed to be affected by development.

The proposed CIP Costa Pacifico in Sinaloa is a good demonstration of the point. In September 2011, President Felipe Calderon inaugurated the site and declared the 12 kilometers of beach on

⁷² UNWTO Press Release, "UNWTO and partners to promote accessible tourism for all," September 23, 2011.

the property would not affect a single mangrove tree.⁷³ While technically true that no mangroves will be cut during construction, the actual impacts of the proposed CIP Costa Pacifico go far beyond the project's borders and include the footprint caused by a new medium-sized city. FONATUR, based on figures from tourism projects in Quintana Roo, predicts 120,000 new permanent residents will move to Marismas Nacionales by 2025 as a direct result of the CIP Costa Pacifico project.⁷⁴ If the second half of the project is approved by SEMARNAT, the total number of new residents could top 500,000 by 2050. The environmental footprint of this new city will be on top of the 2.89 million tourists predicted to visit the site itself each year.⁷⁵

To calculate the true environmental impact of the CIP Costa Pacifico and any other project site, FONATUR needs to conduct an Environmental Impact Assessment that includes the growth of new residents connected to the development as well as the projected number of visitors.

A more accurate EIA can help strengthen the cost-benefit analysis too, by zeroing in on the true costs of large scale development. Currently, the cost-benefit analysis does not consider environmental impacts because it is typically conducted before the EIA. Since environmental impacts are a real part of the cost of tourism projects, they should be calculated ahead of time and incorporated into the cost-benefit analysis to determine viability. When selecting a site for large scale coastal tourism development, it is important to consider that converting land in this way precludes other uses in the future that have their own value. FONATUR states that its tourism developments are built to last "100 years or, if properly maintained, indefinitely."⁷⁶ That means the land will not be suitable for alternate economic activities for a very long time. Once a site is developed for large scale tourism, it becomes inappropriate for lower-impact nature-based tourism or alternate industries. A forward-looking "highest and best use" analysis is warranted at the outset.



Mangrove along Mexico's coast
Credit: luxuriousmexico.com

Developing for large scale tourism also eliminates the potentially valuable environmental services the land may already be providing. Such services may take the form of clean water supply, erosion prevention, clean air, habitat for pollinators important to agriculture, nurseries for small fish that feed into the commercial fishing value chain, and others. Halting these environmental services by installing tourism or other development on a site can yield a significant direct cost, potentially in the millions of dollars since alternative sources for clean water and crop pollination would need to be found and fish hatcheries would need to be built. Furthermore, air pollution from new contaminants and potential deforestation can lead to higher instances of asthma in children and seniors, for example, which require expensive treatments. Any economic impact analysis necessarily needs to be forward-looking, including long-term (10+ year) forecasts of costs vs. revenues.

⁷³ Jorge Ramos, "Calderon encabeza lanzamiento de Playa Espiritu," *El Universal*, 27 Septiembre 2011.

⁷⁴ FONATUR, *Análisis Costo y Beneficio del Centro Integralmente Planeado Costa del Pacífico*, Agosto 2008, p. 144.; FONATUR calculates the project will attract 12 new residents per tourist room. Following its review of the EIA, SEMARNAT ruled that 10,000 rooms can be constructed, down from 24,000 originally proposed.

⁷⁵ FONATUR, *Análisis Costo y Beneficio*, p. 10.

⁷⁶ FONATUR, *Manifestación de Impacto Ambiental Modalidad Regional para el proyecto "Centro Integralmente Planeado-Costa Pacífico"*, *Municipio de Escuinapa, Sinaloa*. 2010, Chapter II, p. 77.

Globally, coral reefs provide approximately \$529 billion dollars per year in economic goods and ecosystem services,⁷⁷ so their inadvertent destruction or degradation by large scale tourism has real costs. The Maldives, for example, had to build a seawall at a cost of \$128 million per kilometer to protect their coastline after a coral reef was killed off by development there, and it no longer diminished the power of the waves.⁷⁸

Applying these hidden costs into the cost-benefit analysis of a proposed development will give a more accurate assessment and may show that the project doesn't make sense economically.

Case Study: Radisson Blu Resort & Spa, Malta Golden Sands⁷⁹

In 2003, the owner of the Golden Sands located on the island of Malta off Italy took the unprecedented decision to completely rebuild the resort to conform to internationally recognized good practices in sustainable siting, design, and construction. The owner, Island Hotels Group, worked closely with the Malta Environment and Planning Authority to ensure that the property and landscaping would be more sensitive to its surroundings and that environmental considerations were fully integrated into the resort.



*Radisson Blu Resort & Spa,
Malta Golden Sands
Credit: www.radissonblu.com*

The resort was moved inland by nearly 40 meters, taking it as far back as possible from the cliff where it was perched and replacing the original solid line structure with three smaller blocks. This reduced the resort's visual dominance along the cliff while providing scenic views through open spaces of the new structure – thus providing economically appealing view premiums. The landscaping, which uses indigenous plants, has created a softer look to the whole development and a more streamlined access to the beach.

Fresh water in Malta is very limited and has to either be pumped from the ground above the water table or produced from sea water by an energy-intensive reverse osmosis plant. Therefore efforts were taken to conserve water. The resort has been designed to collect rainwater which is stored in five large water reservoirs and used to irrigate the grounds. In addition, a grey water system recycles second-class water for use in toilets and for irrigation.

Various design measures were taken to minimize air-conditioning requirements, including the use of hollow bricks and roofing slabs to reduce thermal conductivity. The balconies in the new building shade and help cool the façade walls, while balcony doors are double-glazed with tinted glass to reduce solar gain.

The changes breathed new life into the resort, yielding increases in occupancy, daily rates, and operational cost savings. As a coastal resort with over 300 rooms, the Radisson Malta Golden Sands is a good example of overall sustainability in siting and design in a sensitive, arid climate.

⁷⁷ Robert Costanza et al., *The Value of the World's Ecosystem Services*, 1997.

⁷⁸ C. Wilkinson and F. Talbot, *Coral Reefs, Mangroves and Seagrasses: A Sourcebook for Managers*, 2001.

⁷⁹ Adopted from "Sustainable Hotel Siting, Design and Construction," *Green Hotelier Magazine*, issue 34, January 2005, <http://shop.iblf.org/DisplayDetail.aspx?which=30>.

Climate Change and Tourism Development in Mexico

Definition and Challenges Posed by Climate Change

According to the *United Nations Framework Convention on Climate Change, Article 1*, climate change (or global warming) is “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.” Despite a highly vocal minority of ‘deniers’, scientific experts and most economic and political leaders agree that the impacts of climate change are accelerating and must be addressed, including by the tourism industry.

There are essentially two strategies which can be used to tackle climate change: mitigation and adaptation. The basic difference between the two is that mitigation addresses the causes of climate change while adaptation deals with its effects.⁸⁰

The tourism sector both contributes to climate change (burning fossil fuels for transport and large hotels, destruction of mangroves and other coastline habitats, for instance) and is affected by it (severe storms, water shortages, coral bleaching, etc). According to the World Tourism Organization (UNWTO) and UN Environment Programme (UNEP), “Transportation causes around 75% of the CO₂ emissions generated by tourism, with aviation representing the bulk part of it (40%).”⁸¹ For coastal tourism, the most important impacts of climate change include rising temperatures, extreme weather, changes in rainfall, changes to coral reefs and oceans, sea level rise, decline in crop yields and loss of biodiversity.

Consequences of Climate Change for Coastal Tourism in Mexico and the Caribbean

According to the CARIBSAVE Partnership, which includes Mexico and 24 other countries, efforts to create sustainable tourism destinations are affected in many ways by climate change. On Mexico’s coastlines, the following impacts of climate change are already evident or projected:

A) Rising Temperatures

According to the Mexican Ministry of Environment and Natural Resources (SEMARAT) and the National Institute for Ecology,⁸² it is likely that temperature will increase by 2°C to 4°C between 2020 – 2080, with increases of 1°C to 2°C along Mexico’s Caribbean, Gulf of California/Sea of Cortes and Pacific coastlines. This is predicted to lead to adverse impacts for coastal and marine tourism including coral bleaching, proliferation of algae and jellyfish, and increasing frequency

⁸⁰ All definitions come from the Working Group II: Impacts, Adaptation and Vulnerability of the International Panel on Climate Change (IPCC), *IPCC Fourth Assessment Report: Climate Change, 2007*, http://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch18s18-6.html.

⁸¹ UNEP, WTO, World Meteorological Organization, “Climate Change and Tourism, Responding to Global Challenges,” July 9, 2008.

⁸² Julia Martínez Fernández, Secretaria de Medio Ambiente y Recursos Naturales, Instituto Nacional de Ecología, “ABC de Cambio Climático: Impactos y Acciones en México,” Foro: Sociedad y Cambio Climático, Mexico, D.F. 24 de Agosto, 2007.

and strength⁸³ of tropical storms. Furthermore, SEMARNAT predicts, “The temperature rise and heavier precipitation may cause an impact on vector related diseases (dengue and malaria).”⁸⁴

B) Extreme weather

In the last 35 years, the number of category 4 and 5 hurricanes – the most severe – have doubled; in contrast, the number of category 1 hurricanes has slightly decreased and category 2 and 3 have remained constant.⁸⁵ Between 2000 and 2005, there were three times as many climate related natural disasters globally than occurred between 1970 and 1999 (29 years)⁸⁶. In 2005, Mexico recorded the highest number of hurricanes to date.⁸⁷

The increasing number and intensity of hurricanes is seriously affecting tourism in the Yucatán and Baja California peninsulas, including causing increased flooding and coastal erosion. The Ministry of Finance (Secretaría de Hacienda) stated that hurricanes Emily, Stan, and Wilma, three of the most severe in 2005, caused losses of 25 thousand million pesos (+/- \$1.5 billion US Dollars) to tourism and other coastal businesses and generated 24,464 insurance claims.⁸⁸ When Hurricane Wilma hit Cancun, 30,000 tourists fled the region⁸⁹ and Cancun’s international airport was forced to operate 240 flights daily, 150 more than usual.⁹⁰

Tourism and other types of coastal development have contributed to the adverse impacts of hurricanes. For example,, “Destroying mangrove forests can increase a country’s vulnerability to climate related impacts, such as stronger and/or more frequent hurricanes or cyclones”⁹¹

C) Changes in rainfall seasonality and/or intensity

In some parts of Mexico, climate change is expected to result in a decline in rainfall. For the decade of the 2020s, it is projected that rainfall will decrease by 5% in the centre-north and south-southeast of the country; and between 5% to 10% for the center and northeast -- with a decrease of up to 30% expected towards the end of this century.⁹² These changes in rainfall are predicted to affect ocean conditions, including increases in salinity and decreases in freshwater inputs from rivers and lagoons. In addition, changes in river plumes may occur, due to the transport of nutrients, sediments (which affects erosion on the coastline and hence would have a negative impact on coastal tourism), organic matter, and in the worst case also pollutants which affect the coastal zone.⁹³

⁸³ According to the Saffir-Simpson hurricane wind scale.

⁸⁴ Juan Elvira Quesada, Secretario de la SEMARNAT, “México ante el cambio climático,” Seminario Anual 2010: Agua y Sociedad del Conocimiento ante el Cambio Climático,, México, D.F., 4 de noviembre de 2010.

⁸⁵ M.E Hernández-Cerda, L.A. Torres-Tapia y G. Valdez-Madero, “Sequía Meteorológica,” *México: una visión hacia el siglo XXI*, El cambio climático en México. Instituto de Geografía, UNAM, 2007.

⁸⁶ Víctor Manuel López. et. al., *CAMBIO CLIMÁTICO EN IMÁGENES Y TEXTOS*, 2011, http://www.cvcccm-atmosfera.unam.mx/cvcccm//documents/reportes_finales%20_2_fase/Anexo_imagenes_y_textos.pdf.

⁸⁷ C. Gay and F. Estrada, “Cambio climático en México,” Centro de Ciencias de la Atmósfera, UNAM, 2007.

⁸⁸ “Regulan pólizas para huracanes,” *Periódico Reforma*, 7 de octubre del 2007.

⁸⁹ “La salida: buscan turistas escape,” *Periódico Reforma*, 26 de octubre del 2005. .

⁹⁰ “Saturan los turistas aeropuerto de Cancún,” *Periódico Reforma*, 26 de octubre del 2005.

⁹¹ UNDP-UNEP, *Mainstreaming climate change adaptation into development planning: A guide for practitioners*, UNDP-UNEP Poverty-Environment Initiative, 2011

⁹² Juan Elvira Quesada, Secretario de la SEMARNAT, “México ante el cambio climático,” 4 de noviembre de 2010.

⁹³ A. Martínez Arroyo et. al., *Vulnerability to climate change of marine and coastal fisheries in México*, Centro de Ciencias de la Atmósfera, Universidad Nacional Autónoma de México, La Paz, Baja California Sur, México; 2010.

D) Changes to Coral Reefs and Oceans

Rising temperatures are the greatest threat to coral reefs, causing coral bleaching, ocean acidification, and, there is strong evidence, increases in infectious diseases in corals.⁹⁴ Coral bleaching stress occurs when water temperatures exceed 1.0 °C above the maximum mean summertime temperature,⁹⁵ and this is already occurring along the MesoAmerican Barrier Reef and along Mexico's Pacific coast and sea of Cortes, with impacts likely to increase over time.⁹⁶



Coral Bleaching
Credit: canary-project.org

Coral reefs are a vital component of coastal tourism. Revenue from dive tourism accounts for almost 20% of total tourism receipts in the Caribbean.⁹⁷ In addition, Caribbean coral reefs provide ecosystem services for tourism and fisheries valued at \$1.5 to \$3.5 billion per year.⁹⁸ The rapid degradation and eventual loss of coral reefs in Mexico that come with a 2.0°C rise in temperature⁹⁹ will be a tremendous blow to tourism and fisheries unless decisive action to mitigate and adapt are taken quickly.¹⁰⁰ While it is usually cheaper to avoid degradation than to pay for ecological restoration, there are, nonetheless, many cases in which the benefits from restoring degraded ecosystems far outweigh the costs. Such restoration projects could become increasingly important as a means of adapting to climate change.¹⁰¹

⁹⁴ Murray Simpson, CARIBSAVE Partnership, "The CARIBSAVE Partnership and Climate Change," Presentation to Caribbean Tourism Organization Sustainable Tourism Technical Committee, May 12, 2010, <http://caribbeanstc.com/wp-content/uploads/2010/05/DrSimpsonCaribSaveMay2010.pdf>.

⁹⁵ P.W. Glynn and L. D'Croz, "Experimental evidence for high temperature stress as the cause of El-Niño-coincident coral mortality," *Coral Reefs* 8, 1990, pp. 181-190. Other causes of coral loss include increases in ocean acidity, sedimentation, cyanide fishing, pollutants, and salinity, as well as uncontrolled tourism and fishing. Paul Marshall and Heidi Schuttenberg, "Coral Bleaching: A Review of the Causes and Consequences," Chapter 4, *A Reef Manager's Guide to Coral Bleaching*, IUCN, Government of Australia, Great Barrier Reef Marine Park Authority, NOAA (National Oceanic and Atmospheric Administration), 2006, http://coris.noaa.gov/activities/reef_managers_guide/reef_managers_guide.pdf.

⁹⁶ NOAA Coral Reef Watch Hotspots, <http://www.osdpd.noaa.gov/data/cb/hotspots/hotspotwnc.gif>.

⁹⁷ Julia Marton-Lefevre and Maria Ana Borges, International Union for Conservation of Nature (IUCN), "A New Big Plan for Nature: Opportunities for Travel & Tourism," *The Travel & Tourism Competitiveness Report 2011*, World Economic Forum, 2011.

⁹⁸ Simpson, "The CARIBSAVE Partnership and Climate Change."

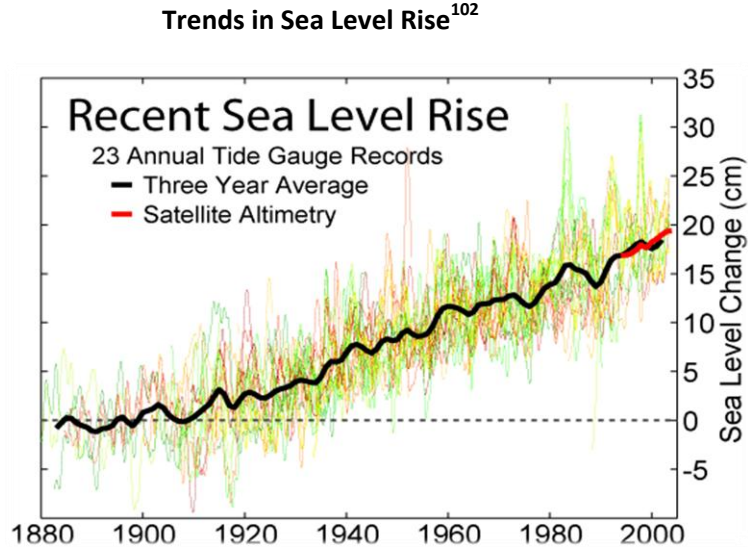
⁹⁹ Simpson, "The CARIBSAVE Partnership and Climate Change."

¹⁰⁰ Marshall and Schuttenberg, *A Reef Manager's Guide to Coral Bleaching*.

¹⁰¹ The Economics of Ecosystems and Biodiversity (TEEB), *Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB*, 2010.

E) Sea level rise (SLR)

Moderate to high greenhouse gas emissions pose a major threat to the stability of the world's ice sheets and introduce the possibility of sea level rise up to ten times the rate observed a century ago. During this present century coastal wetlands and mangroves in Latin America which have been identified as climate hotspots will experience irreversible sea level rises that will submerge coastal wetlands, affecting their ecology and causing displacement and extinction of local and migratory species, as well as impacts on coastal infrastructure.¹⁰³



Due to gravitational and geophysical factors, the Caribbean region is projected to be more seriously affected by SLR than other areas of the world. CARIBSAVE estimates that a one meter rise in sea level in the Caribbean will cause the loss of over 2,700 km² of land with a market value of more than \$70 billion. This will displace over 100,000 people, inundate at least 16 multi-million dollar coastal resorts, and severely disrupt transportation networks including the loss of 10% of airports and 14 (out of 50) ports.¹⁰⁴

According to the Centro de Investigaciones Biologicas del Noroeste, Mexico's Pacific coast is particularly vulnerable to sea level rise. Their 2008 study found, "The increase in sea level seems to be one of the most important threats derived from climate change because this phenomenon, together with the modification of sediment input as a result of damming and decrease in river output, is causing erosion of the coast in several areas of the country -- and this situation is worsening."¹⁰⁵

Further, SLR will continue to cause threats for centuries, even if global temperatures are stabilized at 1.5°C to 2.0°C.¹⁰⁶

F) Decline in crop yields and forest cover

¹⁰² Simpson, "The CARIBSAVE Partnership and Climate Change."

¹⁰³ Walter Vergara, World Bank, "Caribbean coastal and marine ecosystems and climate change," presentation at CREST conference; Innovators in Coastal Tourism, Stanford University, January 22, 2010, http://crestconference.org/charter_club/Climate%20Change%20&%20Tourism/Vergara-Caribbean-Coastal-Marine-Ecosystems.pdf.

¹⁰⁴ Simpson, "The CARIBSAVE Partnership and Climate Change."

¹⁰⁵ Sara C. Diaz, et. al., "Análisis de Vulnerabilidad del Golfo de California Asociado al Incremento del Nivel Medio del Mar," AGENDA DE INVESTIGACIÓN DEL ORDENAMIENTO ECOLÓGICO MARINO DEL GOLFO DE CALIFORNIA, 1era Bienal, Centro de Investigaciones Biologicas del Noroeste, www.cibnor.gob.mx; 27 de Noviembre 2008.

¹⁰⁶ Simpson, "The CARIBSAVE Partnership and Climate Change."

Climate change is also predicted to have important consequences for food security, and impact migratory movements of plants and animals as well as labor forces. In 2009, Mexico experienced a drought that caused significant agricultural losses and in 2010, some of the worst floods in 70 years affected Mexico City, Nuevo Leon, Veracruz, and Tabasco. According to climate scientists, if no immediate action is taken to reduce greenhouse gas emissions, by 2050 Mexico will lose 25% of its cultivatable land and 50% of its forests – with major devastating impacts on the sectors like tourism that depend on food prices and forest cover.¹⁰⁷

G) Loss of biodiversity¹⁰⁸

Climate change as well as the introduction of invasive species “are direct causes for the loss of biodiversity,” concludes the Centro de Investigaciones Biológicas del Noroeste report on coastal and marine fisheries in Mexico.¹⁰⁹ According to a UN report, “The rate of loss of these marine ecosystems is much higher than any other ecosystem on the planet – in some instances up to four times that of rainforests. Currently, on average, between 2–7% of our blue carbon sinks are lost annually, a seven-fold increase compared to only half a century ago.” The report concludes that “sustaining blue carbon sinks will be crucial for ecosystem-based adaptation strategies that reduce vulnerability of human coastal communities to climate change.”¹¹⁰ Loss of biodiversity in Mexico reduces the country’s opportunities to diversify its tourism offer – a pillar of the Acuerdo Nacional por el Turismo.

Mexico’s Coastal Tourism and Addressing Climate Change

Mexico has made ambitious public commitments and taken a number of commendable steps to reduce its contribution to global climate change. The government fully recognizes the causes and dangers of climate change.

“Vulnerability to certain climate change impacts can be significantly reduced with appropriate ecosystem conservation and adequate watershed management,”¹¹¹ a Mexican government report states. In 2000, Mexico ratified the Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) and entered it into force in 2005.¹¹² In 2008, Mexico City became the first Latin American capital to develop a Climate Change Action Program. In 2010, Mexico hosted a summit with the Caribbean Community Secretariat (CARICOM) that adopted a Climate Change Declaration which acknowledged “the powerful impact that environmental degradation and climate change have on people’s standards of living and on the survival of the countries in the region.”¹¹³

¹⁰⁷ Arroyo et. al., *Vulnerability to climate change*.

¹⁰⁸ Arroyo et. al., *Vulnerability to climate change*.

¹⁰⁹ México Cuarta Comunicación Nacional ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático; Comisión Intersecretarial de Cambio Climático, Secretaría de Medio Ambiente y Recursos Naturales, November 2009.

¹¹⁰ Christian Nellemann et. al., *Blue Carbon: The role of healthy oceans in binding carbon, a rapid response assessment*, UNEP, FAO and IOC/UNESCO, 2009.

¹¹¹ México Cuarta Comunicación Nacional ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático, Comisión Intersecretarial de Cambio Climático, Secretaría de Medio Ambiente y Recursos Naturales, November 2009.

¹¹² Status of Ratification of the Kyoto Protocol, http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php

¹¹³ IISD Reporting Services, “CARICOM-Mexico Summit Issues Climate Change Declaration,” February 22, 2010, <http://climate-l.iisd.org/news/caricom-mexico-summit-issues-climate-change-declaration/>.

The Mexican government has set a goal to reduce GHG emissions by 50% by 2050 (using the year 2000 as a base year).¹¹⁴ This is a relatively ambitious target. Currently 75% of Mexico's energy comes from fossil fuels and nearly 20% from large hydro-electric dams, with a mere 3% from renewables (solar, wind, small hydro-electric dams, geothermal, and biomass) with enormous capacity to generate more.¹¹⁵

However, despite these actions and commitments, Mexico did not participate in the II International Conference on Tourism and Climate Change in Davos, Switzerland in 2007 and therefore did not sign any related document or commitments.¹¹⁶ In addition, the Ministry of Tourism only has the status of *Permanent Guest* in the *Comision Intersecretarial de Cambio Climatico* rather than full membership, which might make it more difficult to systematically address climate change in tourism projects and programs.¹¹⁷

Furthermore, in the official 2009 Environmental Ministry (SEMARNAT) document "Climate Change in Mexico and potential for GHG emissions by sector", tourism is not considered as a specific sector and is only indirectly accounted for in the transport sector. This does not allow the government to set goals or monitor progress in the tourism industry. A comprehensive tourism sector strategy for addressing climate change would need to include the following areas: transport, energy, building and other infrastructure design, construction, and operations; land use; water consumption and management; and waste management.

Good Practices for Addressing Climate Change in Coastal Tourism:

There are a growing number of best practices for addressing climate change at the design, construction and operational phases of tourism projects. Several certification programs and standards for sustainable tourism now include standards and criteria to address climate change. These include:

- Global Sustainable Tourism Criteria (GSTC)¹¹⁸
- InterAmerican Development Bank's Tourism Sustainability Scorecard¹¹⁹
- SEMARNAT, Voluntary Ecotourism Certification for community-based operations nearby natural protected areas (NMX-AA-133-SCFI-2006)
- SEMARNAT, Requirements and Specifications of Sustainability for Site Selection, Design, Construction, Operation and Abandonment of Tourism Real Estate in the Coastal Zone of the Yucatan Peninsula (Proyecto de Norma Mexicana NMX- AA- 157-SCFI-2011).
- Leadership in Energy and Environmental Design (LEED)
- EarthCheck
- The Developers' Guide to Sustainable Coastal Development in Baja California Sur
- Guía de Planeación, Diseño y Construcción Sustentable en el Caribe Mexicano¹²⁰

¹¹⁴ Quesada, "México ante el cambio climático," 2010.

¹¹⁵ Programa Especial para el Aprovechamiento de Energías Renovables, Subsecretaría de Planeación Energética y Desarrollo Tecnológico.

¹¹⁶ Alejandro Olivera Bonilla, *Del cambio climático al desastre turístico*, Greenpeace México, Septiembre de 2008, www.greenpeace.org.mx.

¹¹⁷ Quesada, "México ante el cambio climático," 2010.

¹¹⁸ Global Sustainable Tourism Council (GSTC), <http://new.gstccouncil.org/resource-center>.

¹¹⁹ InterAmerican Development Bank (IDB), "Tourism Sustainability Scorecard," <http://www.iadb.org/tourismscorecard/scorecard.cfm?language=English>.

¹²⁰ MesoAmerican Reef Tourism Initiative, www.guiamarti.org.

The following are some of the most important Best Practices for mitigating climate change through the design, construction and operations stages of coastal tourism projects.

A) Analyze existing information to incorporate climate change into development decisions

- National, regional and local legal framework (climate change, environment, land use etc.)
- Population issues including capacity to adapt to climate change/ sea level and sources of vulnerability, food security
- Availability of basic public services and growth potential
- Territory (natural land, site selection, possible land use)
- Sea (marine and coastal resources)
- Market trends and supply chain
- Newest trends and resources for green construction and operation
- Access, and/or generate new data for informed decision-making.

B) Careful land use planning:

- Zoning and permitting regulations should consider anticipated impacts of climate change
- Mapping of tourism project:
 - location of buffer zones, location of energy generating devices if not integrated with buildings such as solar energy
 - location of water treatment/recycling stations
 - location of waste treatment/recycling sites
 - building at an acceptable distance from shore and wetlands
 - location of service/logistical infrastructure (health/emergency services, supplies, storage, telecommunication etc.)
- Mapping of adjacent living area with growth potential for future employees, their families and service providers (water, energy, transport, recreation, culture, education, food security – i.e. family orchards, health, other services like banks, retail stores, solid and liquid waste management etc.)
- A “Plan B” territory/escape routes/shelters: to make it possible to relocate customers and vulnerable coastal communities
- Food security partnerships to integrate local producers into the value chain for cost efficiency, reducing carbon footprint of transportation, and indirect job creation with jointly agreed upon environmentally sound, diversified and climate change resilient production.
- Access (land, air, sea) away from erosion zones with materials that absorb rain, reflect heat and are environmentally friendly.
- Preserving natural resources useful to mitigating impacts of climate change, such as:
 - Watersheds and ground water sources including risk zones for flooding and saline intrusion together with other stakeholders, integrate natural water flow and sedimentation processes in land use planning, disturbing as little as possible during construction and restored in case of need, since natural sedimentation is a natural counterbalance to sea level rise
 - Dunes -- protection against extreme weather and sea level rise among other benefits
 - Wetlands – protect against extreme weather, sea level rise and harbor biodiversity vital to food security of coastal communities and key to fishing industry
 - Corals – offer storm protection and attract tourists

C) Energy and Offsets

- Design and implement an energy policy and internal operational guidelines, including maintenance of energy dependent equipment. Invest in alternative energy generation mechanisms depending on the resources available at the site (sun, wind, water, geothermal, waves, tides, bio-digestion, waste etc.) to generate a minimum of 50% of total energy demand. It might be useful to remember that decline in water availability could impact the potential for hydroelectric dams which cause other – often very powerful – social and environmental impacts.
- Calculate the project's greenhouse gas footprint and offset all emissions that can't be avoided. Use offset programs that adhere to the CDM Gold Standard or Climate, Community and Biodiversity Alliance.

D) Operations:

- Design general operations with carbon neutral and/or clean production mechanisms
- Manage and recycle water and solid waste
- Purchasing policies prefer local and/or certified sustainable suppliers
- Operational procedure manuals for all units are developed, implemented, evaluated, updated and continuously monitored for quality and environmental sustainability
- Human resources management includes permanent training sessions on service quality and environment (including climate change)
- Transport on premises should be carbon neutral
- Label the carbon foot print of services provided to customers and inform them about concrete ways to contribute to neutrality

E) Institutional/Strategic Alliances

- Academic/scientific sector: support scientific research and continuous monitoring of biodiversity and climate
- Public/private partnerships to optimize energy distribution, natural resource management, community services, etc.
- Other economic sectors (some of which could be):
 - farmer groups -- for crop diversification that can be integrated into the value chain of the tourism operation and supports food security (resilient crops to climate change, non-polluting production inputs, sustainable irrigation; alternative production methods: hydroponic, greenhouses)
 - fishing industry -- to protect the reefs and manage resources sustainably
 - airlines -- for conservation easements or other compensation for carbon emissions
- Communities: Co-design, implement and monitor early warning systems with organized local committees and other stakeholders; develop emergency evacuation plans and implement escape/safety routes; develop and implement safe food storage systems and distribution mechanisms
- NGO's and/or municipalities in charge of protected areas
 - Establish protected areas and support stakeholder in charge of sustainable use for tourism

F) Environment

- Establish conservation easements
- Make and support payment for ecosystem services
- Restore deteriorated watersheds and protect existing ones (together with other stakeholders)
- Restore deteriorated dunes and protect existing ones (together with other stakeholders)

- Landscape with local species
- Install and maintain erosion control measures
- In alliance with others: establish carrying capacity limits of reefs, fishing resources

“The strong seasonality of beach tourism has to be taken into consideration, as it can be exacerbated by climate change. In many beach destinations the high tourist season coincides with low water regimes in dry seasons, aggravating water management and environmental issues”¹²¹

G) Infrastructure

- Sustainable construction standards and use of materials
- Sustainable water management infrastructure including rainwater harvesting
- Coastal protection infrastructure and/or restoration of wetlands (natural coastal protection)
- Infrastructure at distance from beach and fragile wetlands
- Create bicycle lanes (promote zero carbon transportation)

Market-Based Incentives Supporting the Enforcement of Regulations and Standards

Often, adaptation does not require new laws but better enforcement (and monitoring) of existing legislation, standards and codes. In Antigua and Barbuda, insurance premiums increase for property owners who fail to comply with building codes. Source: World Bank 2006a.¹²² Incentives such as tax abatements, credits, land swaps and other perks should be applied as well.

H) Transport

- Use low impact transport on premises of tourism sites and/or include them in compensation schemes for carbon emissions
- Promote the use of bicycles or walking
- Support/organize collective transport of employees (to reduce carbon emissions)

When establishing priorities for a new tourism initiatives, it might be useful to “grade” them with tools found in the UNDP-UNEP’s “Mainstreaming climate change adaptation into development planning: A guide for practitioners.”¹²³

¹²¹ UNEP, UNWTO, World Meteorological Organization, *Climate Change and Tourism, Responding to Global Challenges*, 9th July 2008.

¹²² UNDP-UNEP, *Mainstreaming climate change adaptation*, 2011.

¹²³ UNDP-UNEP, *Mainstreaming climate change adaptation*, 2011

Coastal Resorts

Overview of Mexico's Coastal Resort Sector

Accommodations – hotels, resorts, villas, condominiums, etc. – are the centerpiece of coastal tourism development. Coastal tourism has been part of the Mexican government's long-term national development strategy since the mid 20th century. As one study explains:

“Throughout the 1950s and 1960s, development was overwhelmingly concentrated in Acapulco, Zihuatanejo, Mazatlan, and Puerto Vallarta, situated on Mexico's Southwest coast, and on Cozumel, an island situated just off the Southeast coast. These resorts benefited from improvement to public infrastructure and they boomed following construction of road and rail links to Mexico City. From the 1970s onwards, the Mexican government emphasized tourism's potential as a major source of foreign exchange and employment. This was evidenced by the creation in 1974 of the National Fund for Tourism Development or FONATUR (El Fondo Nacional de Fomento al Turismo), a federal agency tasked with the administration and provision of financial support and incentives for the construction of hotels, condominiums, and other tourism related-infrastructure.”¹²⁴

From the beginning, FONATUR undertook large-scale, all-inclusive resort developments geared to the international market along the Pacific and Caribbean Coasts. These “all-inclusive resort” developments were designed to provide all amenities and activities within the complex, including a range of accommodations, as well as golf, spas, shopping centers, and marinas. Known as Integrally Planned Tourism Centers (CIP's), FONATUR undertook these projects in stages:

In 1974, FONATUR began its first two Integrally Planned Tourism Centers: CIP Cancun and CIP Ixtapa. These were followed by CIP Los Cabos which was completed in 1976, CIP Loreto begun in the early 1980's, and CIP Huatulco in the late 1980's.¹²⁵ These were the first five CIP's completed by FONATUR, and are seen by the agency as “successful examples of the integral planning that FONATUR promotes; as well as serving as calling cards for Mexican tourism abroad.”¹²⁶

No new CIPs were undertaken in the 1990s. Then in 2004-2005 FONATUR began to build the CIP Nayarit which is scheduled to be completed in the year 2025.¹²⁷ In 2008, FONATUR announced plans to build its 7th CIP, Costa Pacifico in Escuinapa, Sinaloa, and, in 2009 it announced it would build an 8th CIP, Costa Lora in Soto de la Marina, Tamaulipas.

These mega-resort developments are being spurred by a significant growth of Mexican investment in the tourism sector. By the end of 2010 Mexico had an estimated 2,114 hotels along its Pacific, Gulf, and Caribbean coastlines, totaling 163,072 rooms. These numbers comprise beach destinations in the states of Baja California, Baja California Sur, Colima, Chiapas,

¹²⁴ Gareth Shaw and Sheila Aqarwal, editors, *Managing Coastal Tourism Resorts: A Global Perspective*, Channel View Publications, November 2007, pp. 217-219.

¹²⁵ FONATUR, “Proyectos y desarrollos FONATUR,” http://www.fonatur.gob.mx/es/proyectos_desarrollos/index.asp.

¹²⁶ FONATUR, “Nuevos Proyectos FONATUR 2007-2012”, 1 de noviembre de 2007.

¹²⁷ FONATUR, “Resultados y Beneficios Alcanzados,” *Informe de Rendicion de Cuentas de la Administracion Publica Federal, 2001-2005*, pp. 310-311; Guadalupe Aldape Perez, “Innovative Tools for Encouraging Tourism Sustainable Development in Mexico: Case Study: Litibu, State of Nayarit,” 43rd ISOCARP Congress, 2007.

Guerrero, Jalisco, Nayarit, Oaxaca, Quintana Roo, Sinaloa, Sonora, Tamaulipas, and Veracruz.¹²⁸ In 2010, Mexican companies accounted for 82.9% of the total U.S. \$3,566 million investment in tourism.¹²⁹ Investment in hotel properties used for traditional-style hotel vacations accounted for the largest share (47%) of this total investment in tourism, ahead of residential tourism (vacation and second homes) which accounted for 32% investment share.¹³⁰

As the chart below indicates, between 2005 and 2009, the number of hotels and hotel rooms in Mexico increased while during the same period, the number of overnight visitors to Mexico and overall occupancy rates fell.

Tourism Statistics for Mexico: 2005 - 2009¹³¹

Total #'s of:	2005	2009	% difference
Overnight Stays	21,915,000	21,454,000	2% decline
Occupancy Rates	53%	46%	13% decline
Hotels	13,751	16,231	15% increase
Hotel Rooms	535,039	623,555	14% increase

During the first decade of the 21st century Mexico's international tourism was buffeted by "a perfect storm" of disasters -- including economic recession, H1N1 virus, hurricanes, and drug-related violence -- forcing beach resorts to offer deep discount packages to boost numbers of "heads on beds." Over the traditionally active Memorial Day weekend at the end of May 2009, for instance, tourism officials reported that occupancy in Cancun was only 43%, down from 85% at the same time in 2008; in early May 2009, occupancy had plummeted to 20%. It was a similar story along the Riviera Maya's 81-mile stretch of resorts between Cancun and Tulum where tourism officials reported that occupancy was hovering at about 27% for the month of May 2009.¹³²

January Occupancy Rates in Cancun¹³³

% Occupancy	Jan 1, 2007	Jan 1, 2008	Jan 1, 2009	Jan 1, 2010	Jan 1, 2011
All hotels	86%	87%	87%	84%	85%
All Inclusive Resorts	94%	91%	90%	92%	91%

May Occupancy Rates in Cancun¹³⁴

% Occupancy	May 1, 2007	May 1, 2008	May 1, 2009	May 1, 2010	May 1, 2011
All Hotel	69%	83%	38%	62%	54%
All Inclusive Resorts	67%	73%	45%	78%	61%

While this mix of global and domestic crises accounts for some of the drop in tourism numbers and revenue at coastal resorts during the first decade of the 21st century, the pattern in Mexico also mirrors global trends in consumer preferences noted by the UNWTO. According to a 2001 UNWTO analysis, sun-and-sand resort tourism had "matured as a market" and its growth was

¹²⁸ SECTUR, DataTur, "Sistema Nacional de Información Estadística del Sector Turismo de México," http://datatur.sectur.gob.mx/wb/datatur/datatur_usuarios_administracion.

¹²⁹ SECTUR, "Inversión privada identificada en el sector turismo," *Padron Nacional de Proyectos de Inversión*, December 2010, <http://www.sectur.gob.mx>.

¹³⁰ SECTUR, "Inversión privada."

¹³¹ UNWTO, *Compendium of Tourism Statistics: Data 2005-2009*, UNWTO, Madrid, pp. 250-251.

¹³² Chris Gray Faust, "In Mexico, Tourists Take Advantage of Hotel and Resort Deals," *USA Today*, May 29, 2009.

¹³³ Asociación de Hoteles de Cancun, <http://www.ahqr.com.mx/espanol/files/comparativo.htm>.

¹³⁴ Asociación de Hoteles de Cancun.

projected to remain flat.¹³⁵ Indeed, data on Mexico's lodging market showed that demand at FONATUR's "integrally-planned" beach destinations declined between 1994 and 2001, with both occupancy and revenue per available room (RevPAR) in 2001 at the lowest level in eight years.¹³⁶

Environmental Impacts

This large-scale growth of coastal tourism and vacation developments is putting increasing pressure on often fragile ecosystems, especially within the Federal Maritime Land Zone of Mexico (zona federal marítima terrestre).¹³⁷ The website of the Mexican Attorney General of Environmental Protection (Procuraduría Federal de Protección al Ambiente) enumerates some of the problems:¹³⁸

"Tourism real estate development along the coasts (construction of basic infrastructure, hotels, condominiums, golf courses, marinas, complementary buildings, and others) causes strong environmental pressures on coastal ecosystems, which are considered fragile (mangroves, coral reefs, coastal dunes, wetlands, etc.), principally through the lack of adequate planning and the failure of investors to observe environmental regulations, given that they develop their tourism projects without federal environmental authorizations (environmental impact authorizations and forested land use change permits) or social permits (concessions or authorization). The principal negative environmental impacts generated by tourism infrastructure development are:

- i) Modification and destruction of terrestrial and aquatic habitat for local flora and fauna;
- ii) Change in use of the forest floor;
- iii) Generation of dangerous pollutants;
- iv) Contamination of soil and water sources from liquid emissions (discharge of waste water, oil, lubricants and hydrocarbons);
- v) Introduction of invasive species;
- vi) Emission of loud noise and vibrations from the use of heavy machinery;
- vii) Alteration of coastal dunes;
- viii) Obstruction of surface and groundwater ;
- ix) Removal of mangrove vegetation due to construction.

"With regard to Mexican national patrimony, tourism development has generated:

- Illegal occupation of the Mexican Federal Maritime Land Zone (ZOFEMAT) and land recovered from the sea (TGM) by nationals and foreigners.

¹³⁵ UNWTO, "Global Forecasts and Profits of Market Segments," *Tourism 2020 Vision*, vol. 7, Madrid, 2001.

¹³⁶ Unpublished reports cited in Dean and Pesenti, "Sustainable Coastal Development: La Escalera Nautica," 2003, p. 11.

¹³⁷ This area comprises the full length of the beach along all of the coasts of Mexico and 20 meters above the high tide of the sea at any given location. Federal Maritime Land Zone in Mexico, <http://www.mexicolaw.com/LawInfo30.htm>.

¹³⁸ PROFEPA,, http://www.profepa.gob.mx/innovaportal/v/430/1/mx/impacto_de_desarrollos_turisticos.html.

- Failure to comply with the established legal instruments that protect the use and enjoyment of the coastline (ZOFEMAT and TGM).
- Properties which – due to lack of access – convert public beaches into private beaches.
- Real estate companies that don't orient their buyers on the legal obligations of concession titles with regard to the ZOFEMAT.”

Certification Programs and Good Practices for Coastal Accommodations

Over the last 20 years, as a response to concerns about the negative environmental and social impacts of tourism, there has been a significant emergence around the world of voluntary sustainable tourism certification programs designed to measure various types of tourism businesses at the operational level. Today there are an estimated 130 sustainable tourism certifications worldwide,¹³⁹ the majority of them for accommodations. While some only measure environmental impacts, the most comprehensive of these certification programs measure “the triple bottom line” -- the social, environmental, and economic impacts of hotels. These certification programs measuring sustainability complement the well-established and globally recognized 5-star certification program for hotels that rates quality, service, and price.

While the 5 star program is virtually universal for hotels involved in international tourism, many hotels have yet to be ‘green’ certified. The reasons are many: sustainable tourism certification programs don't exist in all countries and their criteria are not uniform from one program to another, they can be time consuming and costly for individual businesses and their market value is often unproven. There is, however, growing recognition that for a tourism destination to be sustainable and competitive, it must follow good environmental and socioeconomic practices all the way through, from site selection to operation. This includes but is not limited to compliance with national and local regulations.

Third party certification is one important tool for ensuring sustainability of accommodations, including those in coastal areas. The 37 “baseline” criteria of the Global Sustainable Tourism Council (GSTC)¹⁴⁰ which are synthesized from certification programs around the world reflect the current international consensus regarding the minimum environmental, socio-economic, and cultural heritage requirements for a tourism project to be considered sustainable. Thus, the GSTC are a key source for the adoption of good environmental and social practices by hotels and other components of tourism projects.

In addition, any Mexican tourism project seeking financial support from the Inter-American Development Bank will need to conform to the IDB's **Sustainability Scorecard for Tourism Projects in Latin America and the Caribbean**. This Sustainability Scorecard, based on the GSTC, is designed to guide tourism developers in Latin America in developing more sustainable projects and adopting the best sustainability practices. It includes 63 criteria or standards, each with up to 6 possible color coded performance indicators ranging from excellent to unacceptable. The criteria are organized into six major sections: 1) Effective sustainability management system, 2) Socio-Economic impact, 3) Cultural Heritage Impact, 4) Environmental

¹³⁹ GSTC, “An Open Letter,” 2011, http://new.gstccouncil.org/uploads/files/gstc_open_letter_oct_11_2011.pdf.

¹⁴⁰ GSTC, <http://new.gstccouncil.org/>.

impact, 5) The project's cumulative impact on the tourism destination, and 6) Real-Estate Activities associated with the tourism project.¹⁴¹

Unlike Costa Rica, Kenya, Australia, and a growing number of other countries, Mexico does not yet have a national certification program to measure the environmental and social impact of hotels. There are, however, currently a number of different tourism certification programs/norms operating in Mexico that could apply to be accredited and/or recognized by the GSTC. Two of them are government sponsored:

- **Voluntary Ecotourism Certification** for community-based operations located near natural protected areas was produced in 2006 by SEMARNAT (Secretariat of Environment and Natural Resources). The purpose of the ecotourism certification, which is covered by SEMARNAT's ecotourism regulation (**NMX-AA-133-SCFI-2006**), is to certify ecotourism businesses and provide *"small, rural tourism business owners with training, technical assistance, and marketing support."*¹⁴² Based upon the principles of international guidelines such as the United Nations Global Compact, the Global Sustainable Tourism Criteria, and ISO standards, the program aims to specifically address the main environmental issues affecting Mexico, namely:
 - Conservation and sustainable use of ecosystems and biodiversity
 - Prevention and control of pollution
 - Comprehensive management of water resources

Businesses submit to a third-party certification process which involves two independent auditors who evaluate whether the business fulfills the criteria of the regulation. According to the Secretary of SEMARNAT, *"A business' infrastructure cannot affect tributaries of water, deteriorate wildlife habitat, or interrupt the biological processes of native species; a building's architecture and design should utilize natural sources of energy such as the sun, incorporate the surrounding landscape, and use materials that are compatible with the environment; it should use eco-techniques to manage water and wastes correctly, and incorporate alternative energy sources; it should use sustainably produced biodegradable products from local providers; offer information and educational materials about environmental and cultural themes to tourists; establish marked trails; and have an environmental education program and participate in conservation, cultural, and community initiatives."*¹⁴³

There are currently over 30 campsites and ecolodges in Mexico certified under this norm. However, none are coastal¹⁴⁴ largely because this program is geared to small rural tourism projects, not large resorts.

- **Mexican Norm (NMX-AA-157-SCFI-2011)** on sustainability requirements and specifications for siting, design, construction, operation, and use of tourist

¹⁴¹ IDB, "Tourism Sustainability Scorecard."

¹⁴² "Deconstructing Mexico's SEMARNAT ecotourism regulation," Green Loons Blog,, February 2, 2011, <http://www.greenloons.com/greenloons-blog/eco-certifications/deconstructing-mexicos-semarnat-ecotourism-regulation.html>.

¹⁴³ Irene Lane, "Going to Mexico? Stay green with SEMARNAT eco-certified businesses," *Ecotourism Examiner*, February 2, 2011, <http://www.examiner.com/ecotourism-in-national/going-to-mexico-stay-green-with-semarnat-eco-certified-businesses>. For a list see: SustainableTrip.org, <http://www.sustainabletrip.org/search/index.cfm?region=&cid=&tod=4&susstat=1&certid=8&p=&f=&toa=>.

¹⁴⁴ Lane, "Going to Mexico?"

development sites or coastal tourism projects in the Yucatan Peninsula. This new certification program, which has not yet been officially approved, covers the three contiguous Mexican states of Campeche, Quintana Roo, and Yucatan that share similar ecosystems and biodiversity.¹⁴⁵ This is Mexico's most comprehensive certification and is supported by dozens of organizations and institutions, and government agencies. It was approved in April 2011 by a working group of the Secretaria de Economia and is pending final government approval.

It is intended to provide a range of benefits:

- Position tourism destinations of the Yucatan Peninsula as highly competitive sustainable destinations, in order to attract a niche part of the tourism market.
- Protect the ecosystems, which are the core component of the tourism attraction.
- Constitute a frame of reference for developers, tourism service providers, and for different levels of government in their performance in sustainability and best practices
- Be the foundation for a sustainable tourism certification program.
- Establish adaptation and mitigation measures against the effects of climate change.
- Provide market incentives such as government advertising and trade show promotion to those who fulfill the requirements of the norm.¹⁴⁶

It covers the social, economic, and environmental aspects of site selection, design, construction and operation of hotels as well as golf courses and marinas. It is designed to be compatible with international sustainable tourism norms.

In addition, there are several private sector certification schemes operating in Mexico. Three of these certification programs are:

- **EarthCheck.** This is the largest environmental and social management system in use by the travel and tourism industry for the benchmarking and certification of their operational practices. It was developed by the Australian Government's Sustainable Tourism Cooperative Research Centre (STCRC) and the company EC3 Global. In Mexico, there were by the end of 2011 29 hotels certified or benchmarked by EarthCheck, including resorts along the Pacific Coast, the Caribbean coast, and the Gulf of Mexico.¹⁴⁷
- **Green Globe Mexico.** This is a certification scheme licensed by Green Globe Certification Inc. based in the United States. Supported by environmental organizations including PRONATURA SUR A.C and Productos y Procesos Sustentables A.C., Green Globe Mexico provides sustainability certification and related services under the Green Globe brand for Mexico. Green Globe Mexico is mostly focused on the Mayan Riviera, where it has certified three hotels and is in the process of certifying another five.¹⁴⁸

¹⁴⁵ Secretaria de Economia, Proyecto de Norma Mexicana, NMX AA 157 -SCFI-2010, "Requisitos y especificaciones de sustentabilidad para la seleccion del sitio, disenio, construccion, operacion y abandon del sitio de desarrollos inmobiliarios turisticos en la zona costera de la peninsula Yucatan,"

<http://www.seduma.yucatan.gob.mx/archivos/noticias/documento/201007294337.pdf>.

¹⁴⁶ NMX AA 157-SCFI-2011, p.9.

¹⁴⁷ EarthCheck, Member Search,

<http://my.earthcheck.org/Member-Search/central-america/mexico/accommodation-vacation-hotel/Default.aspx#results>.

¹⁴⁸ Green Globe America Latina, <http://www.greenglobe.com.mx/>,

- **US Green Building Council's Leadership in Energy and Environmental Design (LEED) Standard.** The LEED standard is a US based program for certifying sustainable design and construction, which can provide useful environmental requirements for tourism projects in Mexico. LEED does not, however, include any social criteria. LEED is being promoted in Mexico by the Consejo Mexicano de Edificación Sustentable (CMES), which is also working on the development of a Mexican national standard. There are currently 11 projects across Mexico certified by LEED, including several CityExpress hotels, a chain of business hotels, which has registered more than 9 hotels for LEED certification, including one in Los Cabos and another one in Playa del Carmen.¹⁴⁹

In addition to these government and private sector run certification programs, there are also a number of organizations and handbooks that provide tools to help hotels, including coastal resorts, become more sustainable. Among the most important of these are:

- **MARTI (Mesoamerican Reef Tourism Initiative)** has since 2006 been implementing a program of good environmental management and operating practices with hotels in the Mayan Riviera, Cozumel, and the southern coast of Quintan Roo. By 2011, MARTI, together with two partner organizations — Asociación de Hoteles de la Riviera Maya, Asociación Amigos de Sian Ka'an and the Rainforest Alliance — had promoted more efficient design and resource management for half the hotel rooms (around 22,000 rooms) in the Mexican Caribbean. MARTI and its partners evaluate each hotel's current practices and make recommendations on issues like energy use, waste management and water efficiency. Their new publication "Guía de Planeación, Diseño y Construcción Sustentable en el Caribe Mexicano" is an excellent resource for developers of new tourism projects in the Yucatan Peninsula. MARTI has begun working in the Baja California peninsula as well.¹⁵⁰
- **Rainforest Alliance Tourism Sustainability Standards.** The Rainforest Alliance works with hotels, restaurants and other tourism businesses in Latin America and the Caribbean to help them improve their environmental, social, and economic practices. Through training and technical assistance, it teaches them how to operate sustainably and verify their progress toward this goal. Those enterprises that meet their sustainability requirements are eligible to use the *Rainforest Alliance Verified™* mark. Rainforest Alliance states in its website that "verification does not constitute or attempt to substitute any third-party certification; on the contrary, verified businesses are obligated to eventually become certified if a program is available and operating in their country and accredited by the Tourism Sustainability Council (TSC)." In Mexico, 12 beach resorts - all in Cancun/Riviera Maya – have been recognized under the Rainforest Alliance Verification program.¹⁵¹

¹⁴⁹ "LEED projects and Case Studies Directory,"

<http://www.leadbuilding.org/LEED/Project/RegisteredProjectList.aspx?CMSPageID=243&CategoryID=19&RadGridProjectsChangePage=204>.

¹⁵⁰ Molly Bergen, "Going Green," Conservation International, January 6, 2011,

http://www.conservation.org/FMG/Articles/Pages/greening_tourism.aspx; CREST correspondence with MARTI.

¹⁵¹ Sustainabletrip.org,

<http://www.sustainabletrip.org/search/index.cfm?perPage=10&cid=31&tod=&susstat=2&certid=&p=&f=&toa=&page=1&so=rate>. <http://www.sustainabletrip.org/search/index.cfm?region=&cid=31&tod=&susstat=2&p=&f=&toa=>

- The *Developers' Guide to Sustainable Coastal Development in Baja California Sur*, published in 2009, and applicable specifically to Mexico contains useful information on best practices for sustainable coastal resort developers in a range of critical areas. This guide includes chapters on project siting; potable water and energy; wastewater; access and transportation; landscape, irrigation, and non-building structures; solid waste management; construction procedures; and watershed restoration.¹⁵²

Case Studies

- **Case Study #1. Mayakoba, Tres Rios, and Kanai: Environmental Planning and Management**

The Maya Riviera or Cancun-Tulum Corredor in the State of Quintana Roo, Mexico contains three coastal tourism resorts – **Mayakoba**¹⁵³, **Tres Rios**¹⁵⁴, and **Kanai**¹⁵⁵ that are regarded by SEMARNAT as models for sound environmental planning and management of coastal tourism developments.¹⁵⁶ All three share in common the same environmental system known as Punta Bete-Punta Maroma and the same Mexican consulting firm, GPPA¹⁵⁷, which is handling their environmental planning and management.¹⁵⁸ The Mayakoba Resort (650 ha.) is located near Playa del Carmen and includes 1,600 lineal meters of beach front. It was developed by OHL Desarrollos, a Spanish construction company established in 2001 with environmental sustainability as a vision of its founder and a core corporate strategy.¹⁵⁹ Mayakoba includes three hotels with a total of 670 rooms that are managed by well respected international chains (Fairmont, Rosewood, and Banyan Tree).

The second, Hacienda Tres Rios Resort (133 ha), was developed by Mexican group Sunset World, a hotel company/tour operator that also owns four resorts in Cancun and Riviera Maya. Tres Rios currently includes one hotel with 273 rooms, but the resort's master plan calls for a total of 1,726 hotel rooms as well as a marina and an "ecological park."

¹⁵² Dirección de Planeación Urbana y Ecología Baja California Sur and Sherwood Design Engineers,,*The Developers' Guide to Sustainable Coastal Development in Baja California Sur*, Compiled by Dirección de Planeación de Urbana y Ecología Baja California Sur, Loreto Bay Foundation (hosted by The Ocean Foundation), 2009, <http://www.loretobayfoundation.org/index.php?ht=a/GetDocumentAction/i/3639>.

¹⁵³ Websites include: <http://www.mayakoba.com/>; <http://www.ohldesarrollos.com/defaultdesarrollos.aspx>; <http://www.fairmont.com/mayakoba> ; <http://www.rosewoodmayakoba.com/en/index.cfm>; <http://www.banyantree.com/en/mayakoba/overview>.

¹⁵⁴ Websites include: <http://www.haciendatresrios.com/about-hacienda-tres-rios/>; <http://www.sunsethotels.net/>.

¹⁵⁵ Websites include:

http://www.noticaribe.com.mx/rivieramaya/2009/03/destraban_el_proyecto_kanay_complejo_turistico_para_la_riviera_maya.html; <http://www.alhel.com.mx/es/content.html>; <http://www.gim.com.mx/>.

¹⁵⁶ Hector Alafita et. al., *Reflexiones y Acciones para el Desarrollo Turístico Sostenible, derivadas de la Evaluación de Impacto Ambiental en el Caribe Mexicano: Sistema Ambiental Punta Bete-Punta Maroma*, Secretaría de Medio Ambiente y Recursos Naturales de Mexico (SEMARNAT), Subsecretaría de Gestión para la Protección Ambiental, Dirección General de Impacto y Riesgo Ambiental, Noviembre 2006.

¹⁵⁷ GPPA (Consultores en Gestión Política y Planificación Ambiental) is a leading Mexican environmental consulting firm, <http://www.gppa.com.mx/somos.html>.

¹⁵⁸ While GPPA has been involved in a number of exemplary tourism projects, it has also been part of several widely criticized FONATUR projects, including CIP Costa Pacífico and el Mogote in La Paz, among others.

¹⁵⁹ OHL Desarrollo, "Compromisos,"

<http://www.ohl.es/Plantillas/template11.aspx?IdA=121&IdF=231&IdL=232&idM=585&nvl=2>;

OHL Desarrollo, "Desarrollo Sostenible,"

<http://www.ohldesarrollos.com/Plantillas/SuperPlantilla.aspx?IdA=121&IdF=369&idM=925&nvl=1>.



Fairmont Mayakoba



Hacienda Tres Rios



St. Regis Kanai

The third, the Kanai Resort (264 ha), which is to be developed by Mexican real estate developers ALHEL and GIM, had not yet broken ground as of June 2011. However, Kanai has already signed on the hotel brands St. Regis (Starwood) and Park Hyatt (Hyatt Hotels) to manage the hotels once they are built. The hotel plans to open in 2014.¹⁶⁰ Its master plan envisages 847 rooms as well as a system of water canals.

According to an analysis by SEMARNAT, the guiding principles that informed the environmental planning and management of these three projects is as follows:¹⁶¹

- **Environmental Strategic Objective:** Design, construction and operation of a tourism complex in accordance with conservation and the sustainable use of ecosystems and natural resources of the property and region.
- **Regulatory Strategic Objective:** Design, construction and operation of a tourism complex that strictly conforms to normative tools and applicable environmental policies.
- **Architectural Strategic Objective:** *Design of a high quality tourism complex whereupon infrastructure and services combine luxury and comfort, but also completely integrate the landscape and the environment.*
- **Economic Strategic Objective:** Design and operation of a hotel complex which targets a segment of the tourism market that has a high purchasing power, but that also participates in ecological tourism and environmental conservation.
- **Social Strategic Objective.** Contribute to general development of the region by generating

¹⁶⁰ Starwood Hotels, <http://www.starwoodhotels.com/stregis/directory/hotels/all/list.html>.

¹⁶¹ Alafita et. al., *Reflexiones y Acciones para el Desarrollo Turístico Sostenible*, 2006.

social and economic benefits for the local and regional population.

The SEMARNAT report distinguishes two phases in the environmental planning and management process of these three projects:

- **Environmental Planning Phase:** The principle objectives of this phase are to define with precision and objectivity: a) The existing types of vegetation and their state of conservation or deterioration, b) the various types of ecosystems and their degree of conservation c) the current impacts to existing ecosystems, d) the environmental regulatory restrictions (derived from the applicable environmental policy instruments) the convenient areas for the location and construction of the planned tourism infrastructure, f) the definition of areas which must be incorporated into the project as conservation zones, g) the definition of environmental criteria, techniques and norms, that guide investors and the architectural group in the design of the project, and, h) the adjustment of the project in so far that it conforms to environmental zoning set up.
- **Administration and Environmental Management Phase:** The second phase includes seven management programs: 1) Planning, Supervision, and Environmental Management; 2) Integrated Management of Vegetation 3) Integrated Management of Fauna; 4) Integrated Management of Wastes; 5) Environmental Monitoring 6) Environmental impact mitigation 7) Security and attention to Environmental Contingencies. These are to be addressed during each of the project stages: preparation, construction, operation, and management.¹⁶²

Of these three Riviera Maya resorts, **Mayakoba** is the most developed and is widely acclaimed as a leading example of best environmental practices in coastal development, from site selection through operation. It is located on the central coast of the Mexican Caribbean, an area with highly valuable but fragile ecosystems (forest, mangrove, dunes, beach, reef) and a rich diversity of wildlife and flora. Mayakoba has been recognized as an innovative leader not only in Mexico but also throughout Latin American and the Caribbean.

In 1998, Mayakoba's environmental impact assessment (EIA) was approved by SEMARNAT. The project is being carried out in two phases and envisions the building of 6,924 rooms distributed among 13 hotels, an 18-hole golf course, recreational areas, beach clubs, a system of artificial canals and lagoons with piers, and two vacation home developments. As of March 2011, Mayakoba included the following components:¹⁶³

- Hotel 1: 400 rooms (*Fairmont Mayakoba*, certified and in operation since 2006¹⁶⁴).
- Hotel 2: 138 rooms (*Rosewood Mayakoba*, certified and in operation since 2008¹⁶⁵).

¹⁶² Hector Alafita et. al., "Reflexiones y Acciones para el Desarrollo Turistico Sostenible, Derivadas de la Evaluacion de Impacto Ambiental en el Caribe Mexicano: Sistema Ambiental Punta Bete-Punta Maroma," Secretaria de Medio Ambiente y Recursos Naturales de Mexico (SEMARNAT), Subsecretaria de Gestion para la Proteccion Ambiental, Direccion General de Impacto y Riesgo Ambiental, Noviembre 2006.

¹⁶³ OHL Desarrollos, "El Desarrollo Turistico Mayakoba: Un proyecto innovador del turismo de Mexico," 2011 Corporate Powerpoint presentation.

¹⁶⁴ Fairmont Mayakoba has been certified and verified by the 4 Green Keys Eco-Rating Program, Rainforest Alliance Verified Hotel, Top 7 of Sustainable Hotels from Mesoamerican Reef Tourism Initiative, <http://themexicoreport.com/wp-content/uploads/2011/12/Fairmont-Mayakoba-Green-fact-sheets-English-VF.pdf>.

¹⁶⁵ Rosewood Mayakoba is LEED certified (silver) and is Rainforest Alliance Verified,

- Hotel 3: 132 rooms (*Banyan Tree Mayakoba*, is Rainforest Alliance verified and in operation since 2009¹⁶⁶).
- Hotel 4: 220 rooms (being designed).
- Hotel 5: (negotiations under way with interested hotel brands).
- A certified golf course, *El Camaleon Mayakoba* which opened in 2006 (See Case Study in Golf chapter).
- 56-hectare mangrove area set aside for conservation.

Mayakoba has received top recognition for its innovation and best in class environmental practices, including:

- The 2011 Rainforest Alliance Sustainable Standard-Setter Award, for championing conservation, protecting the environment, and supporting local communities.
- The UN World Tourism Organization’s 2011 Ulysses Award for Innovation in Tourism Governance.¹⁶⁷

Mayakoba’s environmental sustainability design, construction and operations include the following.¹⁶⁸

- The environmental planning phase of Mayakoba involved 49 researchers and internationally renowned experts from at least 12 Mexican research centers, three US research centers, and four environmental consulting companies.
- Mayakoba is set within one of the most important mangrove ecosystems of the Mayan Riviera, the Punta Bete-Punta Maroma wetlands systems.
- The tourism infrastructure was specifically located in areas with secondary or disturbed vegetation, while the environmentally sensitive areas of dunes, mangroves, and jungle were set aside for conservation.
- The first phase of the hotels was located in the areas of disturbed vegetation, more than 600 meters away from the beach and behind the mangroves. A very small percentage of



Artificial canals at Fairmont Mayakoba
Credit: mayakoba.com

http://www.rosewoodhotels.com/en/mayakoba/press/press_room/index.cfm/rosewood-mayakoba-recognized-for-sustainable-tourism.

¹⁶⁶ Banyan Tree Mayakoba, <http://www.facebook.com/BanyanTree.Mayakoba>.

¹⁶⁷ “Mayakoba receives top honors from the World Tourism Organization and the Rainforest Alliance,” <http://www.mayakobaresidences.com/newsletter-11-2011/Mayakoba-resort-receives-top-honors-from-the-World-Tourism-Organization-and-the-Rainforest-Alliance.php>.

¹⁶⁸ Alafita, et al, *Reflexiones y Acciones para el Desarrollo Turistico Sostenible*, 2006; Juan B. Aguilar Jimenez, “Desarrollo Turistico Mayakoba en Mexico: Recuperacion de Manglares,” *Revista Cauce 2000*, Madrid, 2009, <http://www.ciccp.es/default.asp?indice2=391&dem=99>.

mangroves was destroyed during construction, and these were areas previously deteriorated or of lesser environmental value.

- With the threefold aim of improving the hydrological condition of the mangroves, enhancing its ecological value, and offering tourists an aquatic landscape, the Mayakoba project designed and built a system of artificial canals, more than 13 kilometers in length, based on detailed studies of surface and underground hydrology as well as mathematical models of hydrodynamic simulation.
- Wastewater from the resort's wastewater treatment plan is used to irrigate the resort green areas and the golf course. To prevent any organic contamination of the aquifer, the canals, or adjacent maritime zone, the golf course has a drainage system which discharges surface runoff and treated wastewater into the mangrove conservation areas. This tertiary treatment of recycled wastewater through the mangroves is unique in the Mexican Caribbean and has contributed significantly to the improvement of the ecosystem. With the canal system and the input of nutrients from the treated wastewater, the mangroves have grown in size and have provided increased habitat for wildlife. The records show that the population of birds, fish, crustaceans, mollusks, amphibians, and reptiles has increased 500% over an eight-year period.
- In compliance with the legal framework and based also on scientific studies and traditional Mayan knowledge, Mayakoba uses only native plants from the region for landscaping and has developed a "Program for the Comprehensive Handling of Vegetation" as well as a "Catalog of Native Species" from the region.
- Since October 2010, Mayakoba has teamed up with WWF to lead the initiative "For a Low-Carbon Tourism" designed to encourage hotels in the Mayan Riviera to measure and reduce their carbon footprint.
- Mayakoba has a multidisciplinary, scientific and technical team which implements over 370 specific measures of environmental management and monitoring system.

In addition to exemplary environmental practices, the three hotels operating in Mayakoba have a range of social practices and programs designed to support the local Mayan communities. These include buying their arts and crafts, supporting local reforestation programs, providing know-how to improve their bee-keeping activities, fostering locally-guided ecotourism tours to the Sian Kaan biosphere reserve, and promoting local beach clean-up campaigns.¹⁶⁹

- **Case Study #2. The Haciendas and Fundación Haciendas del Mundo Maya: Giving back to the local community**

The Haciendas¹⁷⁰, a collection of five high-end luxury hotels that were built in the late 1990s on restored, former sisal plantations in the states of Yucatan and Campeche, is one the best examples in Mexico of travelers' philanthropy that supports community social and environmental projects. The Haciendas is owned by Grupo Plan, a Mexican real estate development company, and is operated under a management contract by Starwood. One of the five hotels, Hacienda Temozon, has already been certified by EarthCheck for its water savings,

¹⁶⁹ Among the many articles, see: Eric Rosen, "Green Hotel Jobs: Managing The Subterranean Rivers At Fairmont Mayakoba," *Hotel Chatter*, August 18, 2011, http://www.hotelchatter.com/story/2011/8/17/143011/982/hotels/Green_Hotel_Jobs_Managing_The_Subterranean_Rivers_At_Fairmont_Mayakoba.

¹⁷⁰ Starwood, "The Haciendas," <http://www.thehaciendas.com/thehaciendas/sites/default/files/home/haciendas.html>

energy efficiency, reduction of greenhouse gas emissions, and solid waste reduction. In addition, according to EarthCheck, “Each Hacienda sits in the midst of a Mayan community and has become the area’s central economic driver. As such, there is a great deal of inter-reliance between community and Hacienda, which has resulted in the formation of highly sophisticated social programs that are bringing about much needed sustainable change.”¹⁷¹

In 2002, following Hurricane Isidoro which caused great devastation in the Yucatan, Grupo Plan’s social commitment to Mayan communities increased exponentially. To develop self sustainable development projects, Grupo Plan created the Fundación Haciendas del Mundo Maya,¹⁷² a nonprofit organization whose mission is to “create actions which foster the identity, recognition and rescuing of the expressions within the Mayan cultural universe, overcoming extreme poverty by furthering education, health, and sustainable development opportunities while involving the local population as promoters of their own social projects”¹⁷³ The Foundation has contributed to the preservation of traditional medicine and cultural cuisine and the creation of jobs using Mayan handicraft skills that were being lost with the passing of each generation.



Las Haciendas
Credit: Las Haciendas

The Foundation, whose motto in Mayan is “Naat-Ha” (“knowing and understanding to transform”) organizes and finances its programs through guest donations and volunteers,¹⁷⁴ as well as corporate contributions from Grupo Plan. Through the Foundation, the Haciendas have developed a Community Development Plan that addresses the areas of health, education, culture, housing, personal & community development, productive projects, and the environment. For each initiative, the community was required to secure an investment partner or government-funding grant. The following is a description of the Foundation’s most important results achieved:¹⁷⁵

1. Health Care: The Foundation is helping to promote primary healthcare through the preservation of traditional Mayan herbal medicines, which for minor ailments are less expensive and more accessible than pharmaceutical drugs. Native medicinal plant species are grown locally and community nurses trained in their use. Between 2005 and 2011, seven health clinics supported by the Foundation provided primary health care at 16,447 visits. In addition, the Foundation has supported the construction of 56 Community Centers that provide care for over 3,000 children, with an emphasis on combating malnutrition. Community gardens have provided access to fresh, healthy produce while helping to reduce the cost of living. The results have been impressive: by 2009, malnutrition rates had declined from 12.9% to 3.9% and mortality death rates in children aged 0 to 5 years had been reduced to zero.

¹⁷¹ Earthcheck, “Case Study 29: The Haciendas”

http://www.earthcheck.org/media/2530/cs29_haciendas_engl_case_study.pdf.

¹⁷² Fundacion Haciendas del Mundo Maya, <http://www.haciendasmundomaya.com/>.

¹⁷³ Fundacion Haciendas del Mundo Maya, “Quienes Somos?”, <http://www.haciendasmundomaya.com/quienes.html>.

¹⁷⁴ Fundacion Haciendas del Mundo Maya, “Participa,” <http://www.haciendasmundomaya.com/participa.html>.

¹⁷⁵ Fundacion Haciendas del Mundo Maya, <http://www.haciendasmundomaya.com/>.

2. Promotion and Strengthening of Educational Services: Between 2003 and 2011, the Foundation helped to build six community libraries and five educational spaces, bringing educational activities to 11 communities, a total of 56,080 people. Programs offered have included continuing education, computer services, internet access, reading rooms, Mayan cultural heritage, and artistic activities. Adult literacy programs were developed in six communities and cater to the needs of over 500 people, while parenting schools are run in ten communities, resulting in improved family cohesion. For those communities without a library, the Foundation provides a mobile library that serves the needs of nearly 4,000 children, lending 19,667 books between 2008 and 2011.



Foundation Haciendas del Mundo Maya supports public health education, Credit: Fundación Haciendas del Mundo Maya

3. Housing: After Hurricane Isidoro, the Foundation helped to reconstruct 1,441 houses. It provided traditional Mayan housing plans and building materials, while homeowners provided all the labor. Prior to this project, few community residents held title to their lands and so a concerted effort was made to secure property titles. This resulted in 922 property titles being granted, benefiting 4,134 residents. In coordination with the State Water Board (JAPAY), the Foundation constructed in three communities a total of 207 restrooms fitted with ecological septic tanks.

4. Job Creation: Nearly 90% of the employees working at The Haciendas live in the local community.

5. Micro Enterprises and Skills Training: i) Creation and support of seven artisan cooperatives and one service cooperative which supports 250 women in 14 communities. These businesses generated MN\$11,981,581 between 2005 and 2011; ii) Production, management, and administrative training to enhance quality and the commercialization process; iii) Promoting the work of local artisans in Mexico and internationally; iv) Opening four Fair Trade stores which sell high quality handcrafts and handmade products; v) Support and training of 19 Mayan spa therapists in six communities to work in five Hacienda spas; vi) Establishment of micro loan programs in three communities to improve housing and productive enterprises; vii) Provision of technical support and training for three locally owned and operated groups dedicated to the production of honey, gourmet salt, and habanero chilies.

6. Natural Resources and the Environment: Community agricultural units have been established in 11 communities and trained in the use of low-impact farming practices. A honey collection center promotes good practices in regional honey production and directly benefits 12 families in three rural communities. A school orchard based in three middle schools promotes the development of skills in agricultural production and sustainable use of local resources. Family gardens were developed to promote the cultivation of vegetables and involved 117 mothers in five communities. The Botanical Garden at Hacienda Santa Rosa promotes the

preservation of ethno botanical Mayan knowledge through the growth and display of more than 230 medicinal plants.

The Haciendas have received numerous awards for their best social practices, such as the 2005 Tourism For Tomorrow Award given by the WTTC¹⁷⁶ and the 2007 TO DO! Award for Socially Responsible Tourism, presented at the ITB Berlin Conference.¹⁷⁷ They are also Rainforest Alliance verified.

¹⁷⁶ "Grupo Plan/Haciendas Del Mundo Maya, Mexico – Winner Community Benefit Award 2005," http://www.tourismfortomorrow.com/Winners_and_Finalists/Previous_Winners_and_Finalists/2005_Winners_and_Finalists/Haciendas_del_Mundo_Maya/.

¹⁷⁷ "TO DO! 2007 Contest Socially Responsible Tourism Award Winner: Haciendas del Mundo Maya," <http://www.todo-contest.org/preistraeger/pdf/haciendas-preis-e.pdf>.

“Residential Tourism”: Vacation and Retirement Homes

Introduction

Residential tourism, in contrast to conventional tourism, involves non-hotel accommodations that are owned, rented, or leased to either foreigners or nationals for vacation or retirement purposes. The coastal areas of Mexico, Costa Rica, and Panama stand out in Latin America as areas that have experienced a boom in residential tourism, geared mainly to North Americans, over the last decade. The growth of residential tourism is being driven by a number of factors, including U.S. baby boomers looking to stretch their retirement dollars, as well as destinations’ generous fiscal incentives to attract foreign retirees. Indeed, Mexico has become the leading overseas destination in the Americas for U.S. retirees, with large numbers seeking areas on or near the coast.

Vacation and retirement homes can be individual units, condo complexes, separate (typically gated) housing communities, or components in all-inclusive resort developments. While conventional tourism is a business essentially involving the delivery of services based on consumer demand, residential tourism is often driven by real estate considerations: over the past two decades, second home construction has become a central component of larger resort projects because houses or condos can be built and sold quickly, thereby providing capital for other parts of the development.

In Mexico, FONATUR’s plans released in 2008 for the CIP Costa Pacífico near Marismas Nacionales proposed that 64% (29,361 rooms) of the total rooms would be for residential housing, with only 36% for hotel rooms.¹⁷⁸ In contrast, when FONATUR developed Cancun beginning in the 1960s, the focus was on increasing international tourism by attracting high-income guests with luxury branded hotel resorts and improved facilities. Cancun’s original master plan called for two main zones: a tourist zone of beach front resorts, and an urban zone of housing and services for permanent tourism workers, thereby creating a total division between labor and leisure, workers and tourists.¹⁷⁹ There were no vacation homes or condos. It wasn’t until the tourism boom in the 1980s that Cancun became a mass tourism destination, with increased density, sprawling development, and a mix of activities and accommodations, and with some hotel rooms becoming timeshares and condos geared especially to the U.S. buyers.¹⁸⁰

As a CREST study of coastal development in Costa Rica found, this trend towards including vacation homes can make economic sense in financing the construction of large scale resort complexes:

“By combining a resort property with vacation homes, investors first build and sell the homes and then use the proceeds to finance resort construction. The fact that these all-inclusive resort complexes are typically designed to

¹⁷⁸ FONATUR, *Análisis Costo y Beneficio del Centro Integralmente Planeado Costa del Pacífico*, Agosto 2008; Krantz and Honey, *Assessment of FONATUR’S EIA for the CIP Costa Pacífico*, 2010, p. 17.

¹⁷⁹ Hiernaux-Nicholas, “Cancun Bliss,” p. 129.

¹⁸⁰ Hiernaux-Nicholas, “Cancun Bliss,” pp. 124-139; “Cancun City History,” www.cancun.bz/cancun_info/cancun_history.php.

include restaurants, golf courses, marinas, spas, shops, and other amenities, means that the vacation home properties can command a higher price. Within this model, all components help add value to one another. While this makes internal financial sense, can be very lucrative, and can quicken the return on investment, the impacts on the host country are far more questionable. As with cruise tourism, most of the activities and earnings stay within these resort complexes that typically require large investment and imports, not to mention major infrastructure and services (roads, international airports, electricity, police, hospitals, etc.).”¹⁸¹

If road and other infrastructure investments are handled properly, however, they can be at least in part financed by the developer and benefit the local community. Such arrangements should be encouraged for future residential tourism infrastructure developments.

Overview of Mexico’s Residential Tourism Sector

- Investment and forms of residential tourism in Mexico

In recent years private investment in vacation and retirement homes has accounted for about one-third of total investment in Mexico’s tourism sector. In 2010, for instance, investment in the 121 residential tourism projects reported, (which include timeshares¹⁸², fractionals¹⁸³ and second homes), amounted to \$1,148 million, or 32% of total private investment. Investment in hotel properties used for traditional hotel vacations accounted for the largest share (47%) of total investment in the Mexican tourism sector in 2010.



Vacation Home

Credit: mexicovacationvillas.com

Complementary services such as marinas and golf courses for use by both conventional and residential tourism were recorded in a separate investment category, amounting to U.S. \$245 million. Overall private investment in the Mexican tourism sector reached U.S. \$ 3,566 million in 2010, a 19.1% increase over 2009, but it is still more than U.S.\$1,000 million below the level invested in 2008.¹⁸⁴

As in Cancun, most timeshares (90%) in Mexico are actually a room, a suite, or a villa in a hotel,

¹⁸¹ CREST, *Impacto del Turismo Relacionado con el Desarrollo en la Costa Pacífica de Costa Rica: Informe Ejecutivo* Abril 2010, p. 15.

¹⁸² An ownership model whereby many customers own allotments of usage in the same property.

¹⁸³ In a fractional (which can be a condominium or a house) there are usually 4 owners, each of which has a right to use the property for a time block of three months in the year.

¹⁸⁴ Padron Nacional de Proyectos de Inversion, SECTUR, *Inversion Privada identificada en el sector turismo*, , December 2010, p 4, <http://www.sectur.gob.mx>; *Panorama de la Actividad Turística en Mexico*, Consejo Nacional Empresarial Turístico y Universidad y Universidad Anahuac, Marzo 2011.

which is a way for the hotel to maximize its investment.¹⁸⁵ According to a study by RCI, a leading vacation home rental company, in 2009 there were 429 resorts in Mexico offering a total of 58,000 timeshare units. The sales volume of timeshares in Mexico in 2009 was U.S.\$2,800 million, with the average sale price of U.S.\$17,700 and the average yearly maintenance fee of U.S.\$482; foreign buyers accounted for 78% of timeshare sales.¹⁸⁶ That year Mexico ranked #2 worldwide in sales of timeshares, after the United States. The RCI study found that 900,000 U.S. residents own timeshares in Mexico and that at beach destinations, one out every three tourists stays at a timeshare.

According to an International Community Foundation (ICF) report, “For years, U.S. and Canadian retirees have flocked to Mexico as an alternative overseas retirement destination that was affordable, offered desirable weather and was close to their communities of origin in North America. These attributes have made Mexico the #1 overseas retirement destination for older Americans, resulting in a building boom that reached its peak in 2005/06 and stretched from Playas de Tijuana-Rosarito and Los Cabos along the Baja California peninsula, and from Puerto Peñasco, Sonora to Mazatlán, Sinaloa. In southern Mexico, the real estate focus has been on expanding the Cancún corridor to the Riviera Maya.”¹⁸⁷

- **Spending Patterns and Attitudes of Residential Tourists in Mexico**

There is clearly a “green” market among U.S. retirees and second-home buyers. For instance, a report by the research firm American LIVES found that 85% of U.S. homebuyers surveyed said they would pay \$2.25 more per square foot for sustainable housing, while 73% reported they would pay \$4.50 more per square foot for sustainable housing.¹⁸⁸

With respect to the profile of U.S. retirees in Mexico’s coastal areas, the International Community Foundation, has produced a series of five reports that are based on the first-ever analysis of U.S. retirees in Mexican coastal communities. This “U.S. Retirement in Mexico” research series¹⁸⁹ contains important findings regarding the preferences and concerns of retirees that should be used by FONATUR and private developers to better plan the housing and other portions of coastal residential tourism projects.

The ICF study entitled *The Greening of U.S. Retirement Destinations in Mexico* states that “U.S. retirees over 50 years of age living in coastal Mexico are equally environmentally-minded in their passions, their purchases and their actions.”¹⁹⁰ Key findings include:

¹⁸⁵ Jorge De Vicente’s phone conversation with Asociacion Mexicana de Desarrolladores Turisticos (AMDETUR), June 1, 2011 and Asociacion Mexicana de Desarrolladores Turisticos, www.amdetur.org.mx/.

¹⁸⁶ Grupo RCI, *Libro Informativo de la Propiedad Vacacional, 2009*. Grupo RCI is a leading company handling vacation home exchanges and rentals in Latin America and the Caribbean.

¹⁸⁷ Richard Kiy and Anne McEnany, *Housing and Real Estate Trends Among Americans Retiring in Mexico’s Coastal Communities*, International Community Foundation, May, 2010.

¹⁸⁸ Cited in “Greenwashing Risks to Baby-boomers Abroad: An Assessment of Available Strategies to Address ‘Green’ Marketing Misrepresentation to U.S Retiree Real Estate Investors Overseas,” A Center for Biological Diversity Report, San Francisco, CA., March 2009, pp. 2-3.

¹⁸⁹ These five ICF studies are available in Spanish and English at: www.icfdn.org/publications/rra.php.

¹⁹⁰ “International Community Foundation Releases Findings on the Greening of U.S. Retirement Destinations in Mexican Coastal Communities,” press release, March 1, 2011, <http://www.icfdn.org/aboutus/pr/2011March01.php>.

- 63.4% of respondents indicated that issues of environmental sustainability were “somewhat important” or “very important” to them when they selected and purchased their home. Only 7% said that these issues were “not important.”
- In searching for a home in Mexico, 56.4% of respondents indicated that they did not feel that they had any “green” or environmentally friendly options.
- The overwhelming majority of respondents (78.7%) have actively considered their environmental impact on their adopted community in Mexico. They drive less (63.3%), consume less electricity (53.1%) and use less water (41.4%).
- 31% of respondents recycle already and 46.0% of respondents would recycle if they could, as no recycling programs are available in their communities.
- 42% are “concerned” or “very concerned” about climate change.
- When asked what key factors would lead U.S. retirees to leave Mexico, 44.5% of respondents identified declining environmental quality of their adopted community due to increased sewage runoff, litter, and water pollution.

Other ICF studies produced important insights into spending patterns, activities and lifestyle preferences, and attitudes and concerns about Mexico. In terms of economic impacts, key findings from the ICF studies include:

- Almost 44% of Americans residing in Mexican coastal communities were able to live comfortably on less than \$1,000 a month (\$12,000 a year) for household expenses, compared, for instance, with twice as much -- \$21,000-\$27,000/year -- needed to live a less-comfortable lifestyle in California.
- U.S. retirees residing in Mexico continue to maintain strong ties to the U.S., with 50% still considering the United States as their primary country of residence; almost 22% return to the U.S. on a monthly basis and nearly 80% visit the U.S. at least once a year.¹⁹¹

These findings indicate that respondents still have strong ties to the U.S. despite the lower-cost lifestyle in Mexico. This might also indicate that coastal retirement homes, as well as vacation homes—most of which are built on desirable coastal real estate—may be sitting empty for portions of each year, although the recent economic downturn has elicited longer stays in Mexico for fixed-income survey respondents, and some units are placed into rental pools to help offset costs while the principal occupants are away.

In terms of activities and life styles, the ICF studies found:

- 81.1% identified ocean views as the #1 aspect of coastal life they found most attractive.
- Second-home buyers and retirees seek outdoor opportunities in their ‘adopted’ communities, such as jogging trails and nature paths, as well as organized environmental activities, like guided nature walks, fly-fishing, plant identification, and birding. Sea kayaking, hiking, and a master naturalist program are also popular options

¹⁹¹ A follow up online survey conducted for the ICF by Crossborder Group in November 2011 found that the economic crisis was affecting the financial situation and living patterns of U.S. retirees in Mexico. While 51% said the economic recession had “no impact” on the amount of time they were spending in Mexico, 23% said because of the recession, they were now spending more time in Mexico, and 65% reported spending full time in Mexico. In addition, 43% listed the U.S. was their country of permanent residence, while a majority, 54%, said Mexico was their permanent home. Data provided by Anne McEnany.

with second-home buyers.”¹⁹²

- 70.1% said walking on the beach was their favorite pastime, followed by “general relaxation” at 65.2%.
- By comparison, relatively few U.S. retirees play golf (14%) or own a boat (17%), while less than 2% live aboard their boats.

ICF findings regarding the social and civic attitudes of U.S. retirees include:

- 42% said they are members of 1-2 Mexican charities.
- 70% said they contribute financially to at least one Mexican nonprofit organization.
- 60% said they volunteer for a Mexican charity, and 30% do so on a regular basis.
- 74% said they would be willing to pay higher property taxes if guaranteed better municipal services.

These findings demonstrate that U.S. retirees tend to be responsible citizens: they are interested in environmentally sustainable housing and other aspects of ‘green’ living, are actively engaged in the local community, and are willing to pay higher taxes for good municipal services. As the ICF study concludes, U.S. retirees in Mexico are looking for ways to both live sustainably and to give back to and support their “adopted community.” These are strong arguments for both FONATUR and private developers to build ‘green’ housing and to provide ways for retirees to participate in charitable and volunteer activities locally. In addition, there is the potential for the government to raise property taxes on retirement and vacation home developments – if the tax revenue helps to provide improved municipal services.

In addition, the ICF study on housing and real estate documents the volatility of this market: “While Mexico has become a popular destination among U.S. retirees, growing concerns over public safety in Mexico, coupled with the credit crisis that was precipitated by the recent global economic recession and the collapse of the U.S. real estate market, has resulted in several Mexican real estate development projects going bankrupt or simply being unable to proceed (ie. Playa Norte project in Puerto Peñasco, Trump Baja Ocean Resort, south of Playas de Tijuana, and the Villages of Loreto Bay).”¹⁹³ (See Case Study below) The collapse of the U.S. real estate market has inhibited potential retirees from selling their primary homes in the U.S. to purchase a home in Mexico. The study on housing found that “the global economic recession has hit newly retired Americans the hardest, especially those now over-leveraged with second homes or time shares in Mexico that they may not be able to sell at their original purchase price.”¹⁹⁴

The Mexican market research firm, SOFTEC, reported that “during the last quarter of 2009, there were 957 new vacation and retirement-focused development projects across Mexico, with the majority being located in coastal areas. Of these projects, there was a total inventory of 49,983 new homes on the market.” SOFTEC also reported that sales of beachfront property had dropped by more than 20% during the last quarter of 2009 (when compared to 2008) and a recovery was not expected for another 4-5 years.”¹⁹⁵

In addition, fears generated by drug-related violence and other crime in Mexico has also had its toll on the sale of new residential tourism projects. Nearly 58% of those surveyed by the ICF

¹⁹² Kiy and McEnany, *Housing and Real Estate Trends*, p. 14.

¹⁹³ Kiy and McEnany, “Executive Summary,” *Housing and Real Estate Trends*.”

¹⁹⁴ Kiy and McEnany, *Housing and Real Estate Trends*, p. 17.

¹⁹⁵ Quoted in Kiy and McEnany, *Housing and Real Estate Trends*, p. 3.

stated that the number one reason they would decide to leave Mexico would be a noticeable increase in crime targeted towards U.S. retirees or tourists and 47% indicated that growing narco-violence and security concerns in Mexico has led to a noticeable reduction of family and friends visiting them.¹⁹⁶ In response, real estate developers are marketing “security” and “safety” among the amenities they are offering.¹⁹⁷ Significantly, the ICF study further found that “[a]lthough public safety was a consideration for many buyers when selecting their property, recent press about the H1N1 flu virus, narco-violence, and security issues have not reduced the frequency or duration of our respondents' trips to Mexico.” The report added, “In focus groups, respondents reiterated that they felt safer in Mexico than they did in the U.S.”¹⁹⁸

Negative Consequences of Residential Tourism

The ICF research produced a number of positive findings regarding the attitudes of U.S. retirees in Mexico: those surveyed reported that they enjoy their life style; want to be involved in their local community; and prefer low impact activities such as walking, bird watching, and relaxation. On the other hand, the ICF study determined that U.S. retirees are putting relatively modest amounts – about \$1000 per month -- into the Mexican economy. At the same time, the Mexican government provides a very broad incentive package that helps to attract these retirees who obtain legal visas. This includes discounts offered on everything from theater and movie tickets, to restaurants, clothing stores, lawyer fees and jewelry, plus discounts on water bills, prescription medicines, and visits to certain health clinics and hospitals.¹⁹⁹ International Living's Annual Global Retirement Index, ranked Mexico as the best destination in the world for retirement in 2007 and 2008, and as the second best (after Ecuador) in 2009, 2010, and 2011.²⁰⁰

Several studies of residential tourism have identified other areas where residential tourism is less beneficial than conventional overnight tourism. These include:

- **Economic impact:** The economic impact of residential tourism in terms of land sales, initial tax revenue, and construction may be enticing in the short term, but the contributions of hotels to per capita income and employment is greater and more sustainable in the medium to long term than residential tourism.²⁰¹ Like conventional tourism, vacation homes drive up local land prices. For instance, in the town of Boquete, in interior highlands of Pacific western Panama, the real estate pressures of residential tourism caused land price per square meter to rise 500% on average in less than ten years.²⁰² This can drive long time local residents and tourism workers away

¹⁹⁶ In the ICF's follow up survey in 2011, this figure had doubled: 97% reported that concerns about narco-violence and security had led to a reduction of visits by family and friends. However, 80% of retirees said that they themselves viewed the public safety situation in their Mexican community as “very safe” or “safe”, while only 2.5% viewed it as “unsafe.” Information from Anne McEnany.

¹⁹⁷ Kevin Brass, “Mexico Developer Sells Security,” *International Property Journal*, May 20, 2010.

¹⁹⁸ Kiy and McEnany, *Housing and Real Estate Trends*, pp. 13-14.

¹⁹⁹ Leland Baxter-Neal, “Incentives for Retirement & Investment in Costa Rica: Final Report,” CREST, 2010, pp. 8-9, http://www.responsibletravel.org/resources/documents/Coastal-tourism-documents/Incentives_for_Retirement_and_Investment_in_Costa_Rica.pdf.

²⁰⁰ International Living, “Annual Global Retirement Index: The Best Places in the World to Retire in 2011,” August 22, 2011, <http://internationalliving.com/2011/08/annual-global-retirement-index-the-best-places-in-the-world-to-retire-in-2011/>; International Living, “Mexico—still the world's best retirement haven,” August 22, 2008, <http://internationalliving.com/2008/08/mexico-still-the-worlds-best-retirement-haven/>.

²⁰¹ Josep Ros Santasusana, *Informe Final: Mision de Asistencia Tecnica en Turismo para las Provincias de Chiriqui y Bocas del Toro, Panama*, Banco Interamericano de Desarrollo (BID), March 2006,

²⁰² Mason R. McWatters, *Residential Tourism: Deconstructing Paradise*, Channel View Publications, 2009, p. 76.

from the destination, and detract from the original character of the place that attracted second home buyers in the first place.²⁰³

- **Resource consumption:** Residential tourism consumes more water and land/per person than hotels and requires more basic infrastructure per unit, so it generates a bigger environmental impact than conventional tourism, especially in fragile coastal areas or islands.²⁰⁴
- **Low job creation:** In terms of jobs and tourist spending, most jobs generated by vacation homes are during the construction stage. Afterwards, residential tourism is calculated to generate only 0.3 jobs/room in villas, condos, and apartments, compared to an estimated 1.1 jobs/room in hotels, according to FONATUR'S cost-benefit analysis.²⁰⁵
- **Less spending:** While almost 44% of U.S. retirees in Mexican coastal communities report they are living comfortably on \$1000 or less per month, a Harvard business school study found that in 2007, international tourists (who tend to stay in hotels) were spending \$751 per trip, which for most (59%) lasts six to ten days.²⁰⁶ As the Harvard study concludes, "tourists are the most important segment of all international visitors, as they generate 76% of tourism income in Mexico, while representing only 14% of the total number of visitors."²⁰⁷ Many second homes are occupied only occasionally, which means that there is less spending in the local community. Residential tourists who do come for vacation, often bring in many of their provisions, cook their own meals, and may make little use of local attractions, services and transport.
- **Competition with hotels and reduced tax revenue:** Vacation rental properties and second homes create competition with hotels. In a study of Costa Rica's Pacific coast, hoteliers complained they were losing bookings to private home rentals, while tourism officials in government apparently did not anticipate the rapid growth of private homes in projecting numbers of hotel rooms needed in the future.²⁰⁸ In coastal municipalities in Spain, where vacation homes are widely recognized as competing directly with hotels, many vacation home owners lend use of their property to real or supposed friends and family, so no taxes are assessed. And 65% of vacation home users report reaching a deal directly with the owner, which leaves little incentive for the owner to declare the transaction for tax purposes.²⁰⁹ The same is true for Mexico, where an unknown portion of vacation home rentals go unregistered, and the 11% or 16% IVA taxes are not collected. Further, most states in Mexico do not require private home rentals to pay room taxes. In some states, such as Baja California Norte, room tax

²⁰³ Patrick Long, et. al., *Rural Tourism and Second Home Development: The Case of Colorado*, 2009.

²⁰⁴ Santasusana, *Informe Final: Chiriqui y Bocas del Toro, Panama*; Enrique Torres Bernier, "El Turismo Residenciado y sus Efectos en los Destinos Turísticos," *Revista de Estudios Turísticos*, no. 155-156, 2003, pp. 45-70.

²⁰⁵ FONATUR, *Análisis Costo y Beneficio del Centro Integralmente Planificado Costa del Pacífico*, Agosto 2008, p. 144.

²⁰⁶ Anne McEnany, "ICF on US Retiree Trends in Mexican Coastal Communities," *Banderas News*, October 13, 2011, <http://www.banderasnews.com/1110/nb-icfretireetrends.htm>; Michael E. Porter, Niels Ketelhöhn, et. al., "Microeconomics of Competitiveness: The Baja California Sur Tourism Cluster in Mexico," Harvard Business School, May 2008, p. 10, [http://www.isc.hbs.edu/pdf/Student_Projects/Mexico_\(Los_Cabos_BCS\)_Tourism_2008.pdf](http://www.isc.hbs.edu/pdf/Student_Projects/Mexico_(Los_Cabos_BCS)_Tourism_2008.pdf).

²⁰⁷ Porter, "Microeconomics of Competitiveness," p. 10.

²⁰⁸ CREST, "Pacific Coast of Costa Rica: Summary Report," 2010.

²⁰⁹ Exceltur, "Impactos sobre el etorno, la economía y el empleo de los distintos modelos de desarrollo turístico del litoral Mediterraneo Español, Baleares y Canarias," September, 2005, p. 35.

revenue from hotels is used to promote tourism to the state. This benefits vacation home owners even though their units don't generate promotion revenue through the tax, and they take business away from hotels, which do. In a coastal resort destination on the Atlantic coast of the USA (Ocean City, Maryland), by contrast, vacation home rentals are assessed the same 4.5% room tax as hotel stays, in addition to a state sales tax of 6%.

In evaluating the costs and benefits of residential tourism, Mexico can learn from other destinations. As an IDB report on coastal residential tourism notes, more developed tourism destinations such as Spain allows us to draw lessons from the pros and cons of residential tourism, including the dangers of fast real estate development in coastal areas that produces an illusion of a sudden increase of wealth but does not take into account the negative externalities (e.g. economic, environmental, social, fiscal). These only become evident in the medium to long term, once the tourism model implemented is irreversible."²¹⁰

Similarly, CREST's study found that residential tourism along Costa Rica's Pacific coast -- including vacation homes, condos, and apartment towers, as well as housing developments within resorts -- was one of the main sources of foreign direct investment (FDI) during the boom years of 2003-2007. However, residential tourism development has also brought unanticipated demands for government services and resources, while apparently bringing scant long term benefits in terms of employment, taxes, or sales of goods and services. And with the economic crisis, beginning in 2008, investment in residential real estate and tourism development had begun to slow; and, by 2009, it had virtually ground to a halt."²¹¹

Good practices and certification for residential tourism

Whereas certification programs for hotels are now well developed, this has not been the case for vacation homes. As a result, a recent study documents, "some unscrupulous developers are marketing their projects as 'eco-friendly' or 'green' while actually harming the local environment and communities." The study by the Center for Biological Diversity explains, "Part of the problem with a developer identifying a development as 'green' is that while domestic [U.S.] green building guides exist, there are no globally recognized international standards for sustainable or green developments."²¹²

The U.S.-based **LEED Program**, run by the U.S. Green Building Council, certifies sustainable design and construction of homes. The program states that "a LEED-certified home is designed and constructed in accordance with the rigorous guidelines of the LEED for Homes green building certification program. LEED for Homes is a consensus-developed, third party-verified, voluntary rating system which promotes the design and construction of high-performance green homes."²¹³ In 2005, Mexico founded its own green building council (MexicoGBC), the first in Latin America. "Mexico's building and construction industry is just waking up and realizing that we are



Mexico GBC

²¹⁰ Santasusana, *Informe Final: Chiriqui y Bocas del Toro, Panama*, p. 5.

²¹¹ CREST, "Pacific Coast of Costa Rica: Summary Report," p. 9.

²¹² "Greenwashing Risks to Baby-boomers Abroad," pp. 1-2.

²¹³ Green Building Council, "LEED for Homes," <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147>.

big players," Cesar Ulises Previno, MexicoGBC president said in a 2007 interview.²¹⁴ While only a handful of buildings are LEED certified in Mexico, LEED guidelines (which fall short of third-party certification) are being used in the Pedregal Cabo San Lucas project. This project, which is part of Grupo Questro's Puerto Los Cabos Marina and resort development, includes an array of residential units priced between \$195,000 and \$15 million.²¹⁵

Audubon International, a for-profit company which is *not* affiliated with the National Audubon Society, also certifies houses and housing developments (along with golf courses) in the U.S., Mexico and elsewhere. The program offers 3 levels – gold, silver, and bronze – includes an initial site assessment by Audubon International staff and the creation of a Natural Resources Management Plan which serves as a construction and operations manual for the property.

The Audubon Signature Program provides comprehensive environmental planning assistance to new developments to help them "design for the environment." It is not, however, a full certification program.²¹⁶ One Mexican development, Paraiso del Mar, a resort-style housing project in La Paz with over 400 U.S. home owners, claimed in 2009 to be Mexico's "first and only" Audubon International Signature Development.²¹⁷ In fact, there were at least two other Signature Development members in Mexico. More importantly, the developers of Paraiso del Mar are involved in ongoing litigation for a range of environmental violations including destroying mangroves, building within the maritime zone, and inappropriate dredging; press accounts also accuse government agencies of neglecting their oversight responsibilities. By early 2012, some houses are occupied, but the property's ownership had changed hands and legal disputes continued to plague the project.²¹⁸ An Audubon International official confirmed that Paraiso del Mar is a member of the Signature Program "but is not certified." She added, "Currently, there are no Audubon International certified vacation home or retirement home completes in Mexico."²¹⁹

More complete is the newly developed **IDB Sustainability Scorecard for Tourism Projects**,²²⁰ which includes socioeconomic and environmental criteria and best practices for minimizing negative impacts that are directly applicable to the site selection, design, construction, and operation of coastal resort/second home developments, as we saw in the hotels section of this report. Furthermore, the Scorecard contains a specific section with 4 criteria designed to minimize negative consequences of real estate activities linked with tourism:

1. **"The internal rate of return (IRR) of the total project will not depend on real estate transactions for financial viability."** The rationale for this is that it has become fashionable to use tourism projects as a disguise for non-sustainable real estate

²¹⁴ Ronda Kaysen, "Mexico's Buildings Go Green," *Bloomberg Businessweek*, September 12, 2007, http://www.businessweek.com/innovate/content/sep2007/id20070912_326967.htm.

²¹⁵ "Mexico Developer Sells Security," *International Property Journal*, May 20, 2010; You Tube, "Pedregal, Cabo San Lucas, Green Home, LEED guidelines, Ecologic Luxury Mansion," <http://www.youtube.com/watch?v=BjEJRwttu4>.

²¹⁶ Audubon International, www.auduboninternational.org.

²¹⁷ Hills & Forest, [http://www.arthurhills.com/\(A\(tbSkF1dwj80UQKkRQHsK7b2Jz963jqPZARKkdGpt4IGh2Mcw-CdmOKXYB3Kfy1B4pq282wqxwkYe98BpXBFZPIQPqgl1YDysn29CMjs7lcc1\)\)/International_Paraiso-del-Mar.aspx](http://www.arthurhills.com/(A(tbSkF1dwj80UQKkRQHsK7b2Jz963jqPZARKkdGpt4IGh2Mcw-CdmOKXYB3Kfy1B4pq282wqxwkYe98BpXBFZPIQPqgl1YDysn29CMjs7lcc1))/International_Paraiso-del-Mar.aspx).

²¹⁸ Audubon International, www.auduboninternational.org; "Greenwashing Risks to Baby-boomers Abroad," pp. 18-21; Gari-Ellen Donohoe, "Paradise Lost: Who Watches the Watch Dog?", *The Baja Citizen*, October 5, 2010, pp. 1, 12.

²¹⁹ Email correspondence with Nancy E. Richardson, Director, Signature and Classic Programs, Audubon International, February 2012.

²²⁰ IDB, "Tourism Sustainability Council," <http://www.iadb.org/tourismscorecard/scorecard.cfm?language=English>.

development. A reasonable way to determine whether a proposed project is primarily for tourism or for real estate is to calculate the internal rate of return (IRR) without considering real estate sales. Typical tourism IRR for unleveraged large developments runs from 12% to 16%, although it can be much higher. Lower rates indicate an excessive dependence on real estate for the financial viability of the tourism project.

2. **“All real estate sales, transfers, and rentals will be registered locally and at true market value.”** When these transactions are conducted offshore or for registered prices far lower than real prices, it lowers the tax revenue for local governments and makes it difficult for them to offer services.
3. **“Second homes will be added to the pool of hotel rooms and will be managed accordingly.”** When this is the case, second homes contribute to the local economy in the same way that a hotel does. But when they are privately offered offshore or hardly used at all, very little money enters the local economy.
4. **“Houses, condominiums, and apartments, when they are part of a tourism development, will pay taxes or fees for municipal services regardless of whether they are primary or secondary homes.”** When houses, condominiums, and apartments are exempt from local taxes as part of a tourism development, they become users of municipal services (water, sewage, garbage collection, police, road maintenance, etc) without contributing to their support. This leads to financial pressure and the reduction of services from local governments.²²¹

As outlined in this chapter, residential tourism brings with it a range of benefits and costs. Policymakers and developers need to be more acutely tuned to both the preferences and contributions as well as the needs of residential tourists, particularly those who have chosen to live permanently in Mexico. As the ICF studies demonstrate, many retirees are socially and environmentally aware, are interested in contributing to organizations in their adopted communities, and have a preference for ‘green’ design in their housing and surrounding neighborhoods.

On the other hand, there are some important issues to be considered regarding foreign home owners and retirees. In ecologically sensitive, high value coastal tourism destinations, second home owners who are renting their property may be competing with hotels, creating few jobs, contributing only modestly to the economy, receiving a range of government benefits, and occupying prime real estate that might bring more benefit if used for sustainable tourism. The government, therefore, needs to recognize both the costs and benefits of residential tourism.

Further, residential tourism also needs to be rated by comprehensive certification program that measures the environmental, social, and economic impacts of vacation homes and housing developments. Such a program should be based on widely accepted international standards such as the IDB Scorecard or the GSTC criteria.

Finally, there is need for educational awareness of the potential problems and legal rights for those retiring and investing in Mexico; As the Center for Biological Diversity report states, “There has been an increased consumer demand for responsible retirement investment options

²²¹ IDB, “Tourism Sustainability Council.”

abroad.... The result is a need for standards defining green development abroad, enforcement mechanisms to stop unscrupulous developers, and outreach to educate investors.”²²²

Case Study: Villages of Loreto Bay, Baja California Sur: An experiment in triple bottom line sustainability for residential tourism

There are a handful of luxury residential tourism projects in Mexico that incorporate components of environmental and social sustainability. One is the Mayakoba vacation homes that are part of the Mayakoba resort complex²²³ in the Riviera Maya; another is the Pedregal Cabo San Lucas, which is billed as “the first luxury Green Home in Los Cabos” using LEED guidelines and as contributing a portion of its “proceeds will go towards GREEN FOUNDATIONS and spine injury foundations.”²²⁴ A new project still in the design and early development stage, is Amaitlan, located on a 2400 ha. peninsula in Mazatlan in



*Courtyard Homes, Villages of Loreto Bay
Credit: Loreto Bay*

the state of Sinaloa. Its creator and head of its master plan is Jaime Lerner, the famed Brazilian urban planner, who calls Amaitlan “the first sustainable model tourist city in the world.” Its green features will include 100% recycling of garbage and of residual water; electric cars, horses and bicycles instead of motor vehicles; and 70% of the island “conserved as a green area.”²²⁵

Best known, however, is the Villages of Loreto Bay which are part of an 3237-hectare (nearly 8000 acres) residential and resort development project located seven miles south of the town of Loreto in Baja California Sur. Loreto had been selected by FONATUR in the 1970s as one of its original five tourism destinations; but, because of its geographic isolation and low population, it failed to attract investors. In 2003, FONATUR signed an agreement with Canadian investors who proposed building the largest sustainable residential project in North America based on the principles of “New Urbanism.” As Jim Grogan, the development company’s first president and CEO explained, “It is our goal that Loreto Bay set the standard for sustainable developments around the world. Our focus is on conserving energy, reducing water consumption, solid waste

²²² “Greenwashing Risks to Baby-boomers Abroad,” p. 4.

²²³ Mayakoba Residences, <http://www.mayakobaresidences.com/partners/partners-overview.php>.

²²⁴ You Tube, “Pedregal, Cabo San Lucas, Green Home, LEED guidelines, Ecologic Luxury Mansion.”

²²⁵ “Executive Summary,” Amaitlan: Garden city Mazatlan, www.amaitlan.mx; site visit and discussions with developers.

materials, and air pollution, as well as creating economic opportunities through new jobs and local businesses.”²²⁶

Scheduled to be completed by 2020, this ambitious \$3 billion project was slated to eventually include 6,000 homes built in nine phases, as well as two low saltwater-use golf courses, spas, boutique hotels, a marina, and other amenities. Two large sections of land were to be set aside as natural reserves and water catchments. The Villages of Loreto Bay homes were heavily marketed to U.S. and Canadian vacationers and retirees. By November 2007, the development, whose theme was “Live Fully, Tread Lightly,” had sold 750 homes, worth over \$330 million and was being touted as the hottest residential tourism project in the Baja Peninsula. There were, however, some experts who argued that the enormous scale of the housing development and apparent lack of measurable tools via, for instance, a third-party certification program raised questions about its long-term sustainability.²²⁷

Despite the concerns, the project’s most innovative component proved to be the creation of a community fund generated through sales of the vacation homes. This fund was part of the project’s Master Development Agreement between FONATUR and the developers and it was also included in the trust deeds for the homes and condos. It specified that 1% of sales from second homes (new and resale) would be automatically diverted into a community fund, administered by the Loreto Bay Foundation. Between November 2004 and December 2008, the Foundation received nearly \$1.2 million, which it donated, in grants from \$200 to \$200,000, to a range of conservation, education, and public health projects around Loreto. The projects included support for the Loreto Bay National Marine Park, a new hospital and the local fire department in Loreto, and scholarships for rural school children. It also created a guide for real estate developers on standards for sustainable coastal tourism design and construction.²²⁸

However, beginning in 2008, a combination of factors – the economic recession, rumors and fears of drug trafficking, higher than budgeted construction costs, and a change in ownership – brought an end to the revenue stream for the community fund.²²⁹ During the 2008-9 economic recession, Citibank took over the Villages of Loreto Bay project and effectively stopped the development. In 2011, a new developer, Homex, bought the project. Foundation officials are negotiating with Homex to honor the Master Development Agreement, which commits to donating 1% from home sales to the community fund; they are also seeking to create a destination-wide voluntary donation program at other hotels and tourism businesses in Loreto.

The community fund “may be rising from the ashes,” says Mark Spalding, Director of The Ocean Foundation and the Loreto Bay Foundation. “The 1% requirement for a community fund is a great lesson learned from the Loreto experiment, and it is something that could and should be done again. It’s one way (of many) to have the project help pay for the externalities caused by the investment,” says Spalding.²³⁰

²²⁶ Simmons B. Buntin, “The Villages at Loreto Bay: Baja California Sur, Mexico, *Terrain.org: A Journal of the Built & Natural Environments*, no date, <http://www.terrain.org/unsprawl/21/>; Fundación Bahía de Loreto, A.C., “Status 2009,” Loreto Bay Foundation.

²²⁷ Buntin, “The Villages at Loreto Bay.”

²²⁸ Mark J. Spalding. “Villages of Loreto Bay and Loreto Bay Foundation,” *Traveler’s Philanthropy Handbook*, edited by Martha Honey, CREST, 2011, pp.35-37.

²²⁹ Krantz and Honey, “Assessment of FONATUR’S EIA for the CIP Costa Pacifico,” pp. 18-19.

²³⁰ Correspondence with Mark Spalding.

This lesson from the Villages of Loreto Bay is also consistent with the environmental and social attitudes of U.S. retirees in Mexico. In summary, the ICF studies found that retirees are interested in environmentally sustainable housing and other aspects of 'green' living, are actively engaged in the local community, are willing to pay higher taxes for good municipal services, and are looking for ways to both live sustainably and give back to and support their adopted community. These are strong arguments for coastal second home developments to build 'green' housing and to provide ways for retirees to participate in social welfare activities in the area. In addition, there is the potential for the government to raise property taxes on retirement and vacation home developments, if the tax revenue helps to provide improved municipal services.²³¹

²³¹ Krantz and Honey, "Assessment of FONATUR'S EIA for the CIP Costa Pacifico," p. 21.

Marinas

Introduction

A marina is a managed facility that provides dockage and may provide other related services for recreational or tourism watercraft. The term “marina” is widely used in the U.S., Latin America and the Caribbean to describe a managed facility for recreational boats (privately owned) and/or for tourism boats (commercially used) for pleasure boating, sailing, sport fishing, snorkeling, scuba diving, etc. Marina is synonymous with “leisure harbor”, which is also used in some places in Latin America.

Marinas may include a range of types of boating infrastructure for leisure and tourism, all under one management. A central component is wet slips, which are berthing spaces designed for mooring individual watercrafts. Berthing is usually provided by a fixed or floating dock connected to land, in a water body of sufficient depth and adequate protection. Marinas can also provide a “dry storage” in a land based facility for storing watercraft or a “drystack”, an onshore storage that holds boats vertically in racks.



Marina with variety of boats

Credit: solarnavigator.net

While marinas historically were used for smaller private sailing and motor crafts, new marinas increasingly include facilities specifically designed to serve megayachts, which are a special category of large pleasure yachts (over 24 or 30 meters in length, according to two customary classifications).²³²

Marinas in Mexico

In Mexico there are 75 operating marinas with a capacity for 6,000 boats, with 30 more marinas having obtained concessions and in the planning, design, or construction stages.²³³ The Mexican Association of Touristic Marinas (Asociación Mexicana de Marinas Turísticas) is a national voluntary membership organization that currently includes 31 marinas.²³⁴ Most marinas in Mexico are privately owned and operated, even if many were planned as part of FONATUR’s Integrally Planned Tourism Centers (CIPs).

With its vast coastline (over 11,500km), Mexico has a wide variety of coastal regions with different characteristics of boating activity, and different degrees of infrastructure development. On the Pacific coast (with a length of almost 8,500 km), the northern region includes the Baja

²³² Esteban L. Biondi, “Destination Megayacht,” *Marina World*, January-February 2006.

²³³ Information obtained through telephone interviews by Jorge de Vicente. The data is from the Dirección General de la Marina Mercante, the unit within the Secretaría de Comunicaciones y Transportes which maintains a registry of marinas in Mexico.

²³⁴ Asociación Mexicana de Marinas Turísticas, www.ammt.org.

California peninsula (with coastline on the open Pacific Ocean and on the Sea of Cortes) and the States of Sonora, Sinaloa, Nayarit and Jalisco. This region includes the major boating centers of Los Cabos and La Paz (in Baja California Sur) and Vallarta/Bahia Banderas (Nayarit and Jalisco). The central and southern Pacific coastline includes boating areas such as Manzanillo / Barra de Navidad, Ixtapa, Acapulco and Huatulco. The Atlantic coast of Mexico on the Gulf of Mexico and Caribbean Sea has a length of over 3,100 km. The Caribbean coastline of Mexico includes major boating infrastructure in Quintana Roo, mostly near Cancún. A number of marinas are also located along the coastline of the Gulf of Mexico.

Many marinas in Mexico are developed as part of a coastal tourism master plan and stand-alone facilities in a tourist area, but some of the older facilities were developed as private yacht clubs. Many developers historically considered marinas as an amenity adding value to their resorts, residential, or mixed-use developments. However, nowadays most marinas are designed as a profit center within the master development, to be sold, and are run as independent businesses. This results in marinas being ultimately owned and operated by different entities than the resort or residential complexes.

FONATUR's coastal development projects usually include marinas to attract transient yachts, to serve resort residents (typically vacation home owners and retirees in Mexico), and to support tourism operations (fishing charters, tour operators, etc). FONATUR planned marinas for its projects in Cancún, Los Cabos, Ixtapa, Loreto, Huatulco, etc.

FONATUR's most ambitious marina scheme, "Escalera Náutica del Mar de Cortes", was a U.S.\$1.9 billion dollar mega-project launched by the Mexican government in 2002 to boost tourism on the Baja California peninsula and the coastline around the Sea of Cortes. FONATUR's Escalera Náutica project would build a chain (or ladder "escalera") of 24 government-financed marinas, initially envisioned encompassing 26,500 wet slips. FONATUR projected that by 2015, 52,000 private North American yachts, carrying on board over one million visitors a year, would be arriving annually.²³⁵ The mega-project also envisioned complementing the marinas with an array of tourism-related services, including the expansion of 20 existing airports, 12 new golf courses, some 6,500 new condominiums and villas, dozens of new hotels (providing a total of 10,400 new rooms), and a land bridge -- a 4-lane highway across the peninsula -- intended to move yachts from one coast to the other.²³⁶

The Escalera Náutica project failed to achieve its goals due to a combination of reasons, including a misguided concept, market analysis deficiencies²³⁷, civic opposition, poor implementation, and design and construction mistakes. Despite the mega-project being abandoned, FONATUR built eight facilities ("escalas") under this program along the coast of the Sea of Cortes (at least one additional facility is not operational). However, all these facilities total only 155 slips (less than 20 slips per facility on average). These small facilities, which include fueling and sometimes infrastructure for services, are presently operated by

²³⁵ FONATUR, "Proyecto de Escalera Náutica del Mar de Cortés: Documento Básico," June 27, 2002; Dean and Pesenti, "Sustainable Coastal Development".

²³⁶ Sonya Angelica Diehn, "Escalera Nautica: Stairway from Heaven to Hell," InterAmerican Resource Center, January 30, 2003, <http://agaveworks.net/docs/escnaut-en.pdf>.

²³⁷ For instance, a study of the Escalera Nautica project concluded that FONATUR had overestimated by 600% the likely demand for marina space along the Baja peninsula and Sea of Cortes coastlines. EDAW, *The Northwest Mexico Marina Market Analysis*, commissioned by The Packard Foundation, 2002, http://www.crc.uri.edu/download/27B_MarinaMarketAnalysis_english_ok.pdf.

FONATUR.²³⁸ At the same time that the Escalera Náutica program was failing, private developers built a number of financially viable resort marinas in the same region, such as Puerto Los Cabos and Costa Baja.

Consumer Demand

Demand for marinas in Mexico depends on the region and project characteristics. The recent economic downturn has negatively impacted several marinas, but short-term dynamics have had a variety of drivers, and marina operators responded in a variety of ways with different results. Severe reduction in tourism arrivals and stagnation of real estate acquisition by U.S. nationals in Mexico, have negatively impacted many resorts on the northern Pacific region of Mexico. However, despite significant stress, most marinas in Los Cabos and La Paz have maintained relatively high occupancies while capacity has increased significantly.

The origin of the demand for marina slips is different in different areas of Mexico. While U.S. transient boaters, seasonal residents, and retirees are a significant percentage of the demand in Baja California, Mexican boaters have fueled most of the recent growth of the boating industry in Cancún. Additionally, within the same region, some marinas are better suited than others to attract certain types of boaters and different sizes and types of yachts, so performance may differ significantly among projects.

In many areas in Mexico there is an unmet demand for slips or there is a potential for growth of boating. In some cases, pent up demand requires the development of new facilities for the activity to grow. For example, the traffic of megayachts in Baja California has increased significantly after adequate facilities were built in Los Cabos and La Paz. In Cancún, marinas targeted to small and mid-size boats (typically owned by Mexican residents) have very high occupancies, and private docks of waterfront real estate have grown significantly in the last 5 years.²³⁹

The International Community Foundation surveys in 2009 of North American retirees in coastal communities in Mexico found that 30% list fishing and 21% list boating among the leisure activities that drew them to Mexico, while 17% of the surveyed own a boat.²⁴⁰ While most North American retirees do not use boats and do not generate demand for marinas, this research supports the expectation that marina demand will grow as the population of U.S. retirees moving to Mexico increases.

The potential for increasing demand for marinas in Mexico, however, does not support the widespread development of marinas everywhere in the country. The demand assessment for a potential marina project requires specific studies and is usually dependent on a number of factors, including residential growth projections, trends of tourism arrivals, regional boating characteristics, and the strength of the particular boating market segments targeted. Historically, many resort marinas in Mexico have been built without market studies or with very

²³⁸ FONATUR has a special unit, FONATUR Operadora Portuaria, that manages its marinas, www.marinas.fonatur.gob.mx.

²³⁹ Correspondence with Esteban Biondi.

²⁴⁰ Richard Kiy and Anne McEnany, *U.S. Retirement Trends in Mexican Coastal Communities: Lifestyle Priorities and Demographics*, International Community Foundation, March 2010, <http://www.passporttobaja.com/articles-and-information/more-information-at-your-fi/icf-trends-in-mexican-lifes.pdf>, plus correspondence with Anne McEnany.

superficial and optimistic assessments, so it is critical that proper methodologies are used by professionals experienced in marina market dynamics.²⁴¹

Environmental and Social Impacts

Marinas appear to carry a stigma of “always” causing negative impacts. However, while the environmental and social impacts of marinas have often been negative, there are established planning and design tools available to avoid, minimize, mitigate and compensate for harmful impacts. Negative impacts of projects are sometimes due to: shortcomings in the planning stages; poor analysis and assessment of coastal physical processes; lack of clear and consistent criteria applicable to site selection, design, construction, and operation of the marinas; and lack of understanding of the regional system of nautical infrastructure and of the relationship among different policies on coastal, real estate, tourism, and economic development.

At the same time, good practices almost always come down to following guidelines *and exceeding* existing regulations. There is a growing recognition that good environmental practices and economic profits can go hand in hand. As one community activist asked, “Why can’t [marina] developers understand that they can still make money if they do the right thing environmentally?”²⁴²

Examples of “what went wrong” regarding marina infrastructure design, environmental impact analyses (or lack thereof), or economic viability are not hard to find. One such example, the Cabo Riviera Marina and Golf Course, which includes some 285 wetlands, four hotels, over 400 vacation home and condo lots,²⁴³ has caused severe erosion along the beach on one side of the breakwaters. The resort and marina project, located approximately 60 km north of San José del Cabo on the Sea of Cortes, is under construction and beach impacts can be observed in construction progress photos posted by the developer online.²⁴⁴

²⁴¹ Correspondence with Esteban Biondi.

²⁴² James Conaway, “Is Baja on the Block?”, *National Geographic Traveler*, December 2008, <http://travel.nationalgeographic.com/travel/countries/baja-california-sustainable-traveler/>.

²⁴³ “Cabo Riviera Marina & Golf Course,” Baja Real Estate Specialists, http://www.bajabeachinvestments.com/Cabo_Riviera_Marina/page_1978536.html.

²⁴⁴ Cabo Riviera, “Construction Progress,” http://www.caboriviera.com.mx/construction_progress.php.



Cabo Riviera Marina and Resort, Phase 1: April 2011²⁴⁵

Just south of here, an even more massive project, Cabo Cortes, includes plans for a major marina for 490 wet slips, three golf courses, and 27,000 hotel rooms -- almost as many as Cancún has today and almost three times as many as currently in Los Cabos. Cabo Cortes is, however, being opposed by a coalition of environmental organizations and local residents who charge it will consume 100% of the fresh water in the area's one healthy aquifer, destroy virgin sand dunes, and damage the Cabo Pulmo National Marine Park, which is described as "the world's healthiest marine reserve." In early 2011, SEMARNAT quietly gave the Spanish development conglomerate, Hansa Urbana, the green light to begin construction; however, in late 2011 it ruled that construction can only begin if the developers can prove by January 2013 that the reef will remain unharmed. In the wake of the European debt crisis, the financially ailing Hansa Urbana turned over ownership of the project to a Spanish bank, leaving in doubt who actually controls the mega-marina-resort project.²⁴⁶

One of FONATUR's current projects, the CIP Costa Pacifico near Marismas Nacionales, originally included ambitious plans for two interconnected marinas. According to the original plans, there would be room for a total of 383 boats, including 30 mega-yachts of up to 200 feet. Based on environmental concerns, SEMARNAT scaled back the project to one marina and by the end of 2011, authorization was pending from CONAGUA, the water authority.²⁴⁷

- **Social Sustainability and Guest Experience**

Even more than environmental concerns, social sustainability and community inclusion are often completely disregarded in the planning and operation of marinas. While they are technically understood as part of the sustainable tourism principles, they are seldom considered in marina

²⁴⁵ Cabo Riviera, "Construction Progress."

²⁴⁶ William Booth, "Plans for Resort in Mexico Ignite Concern about Reef," *The Washington Post*, November 9, 2011; "Conflict at Cabo Pulmo: Mass Tourism meets Ecotourism," *Geo-Mexico*, November 14, 2011, <http://geo-mexico.com/?p=5386>; "Can Mexico's Environmental Agency Protect Mexico's Coastline?" *Geo-Mexico*, March 24, 2011; "Dirty Development Deals Revealed in Baja California Sur, Mexico!" *Wildcoast/CostaSalva*, November 27, 2011, <http://www.wildcoast.net/media-center/news/429>.

²⁴⁷ Secretaría de Medio Ambiente y Recursos Naturales, Subsecretaria de Gestion para la Proteccion Ambiental, Direccion General de Impacto y Riesgo Ambiental, "Resoluvito CIP Costa Pacifico," February 9, 2011.

projects. Most developers don't yet understand the value to tourists and retirees of an authentic experience with local residents and do not realize that the marina offers an opportunity to include the community within the project.²⁴⁸

While marina developments in pristine environments have the potential to cause negative impacts -- which need to be avoided, minimized, and/or mitigated --, marinas that adhere to what is increasingly recognized as good practices in design, construction and operations can have a net positive environmental, social, and economic impact overall. A tool to achieve positive social impact is the adequate inclusion of the local community in the marina project, by proactively implementing the principles of sustainable tourism in the marina planning process.

Puerto Los Cabos Marina, which is slated to be Mexico's largest private marina when fully built and is part of a large-scale mixed-use tourism project, includes innovations in the physical planning of the project. Puerto Los Cabos is being built by Grupo Questro, a major Mexican coastal tourism and real estate developer and unlike other marinas in Mexico, has integrated the local fishermen community within the marina.²⁴⁹ Biondi says that the Puerto Los Cabos Marina, including water and land areas around the basin, was planned and designed to provide easy public access, an attractive environment for tourists and visitors, convenience for boat operators, and adequate support for fishing activities and sales. The small fishing village of La Playita was at the center of the master plan for the marina. Local fishermen used to store and launch their boats (pangas) from the open beach in front of the village, but the project required cutting through that portion of the beach. In exchange, a dedicated basin for pangas was included in the marina plan. The fishermen area built as part of the project includes fish cleaning stations conveniently located near the docks and with easy access for tourists to purchase directly from the local fishermen. Adjacent to the panga basin there is a community social space and community access to the beach. Biondi says that this aspect of the Puerto Los Cabos Marina – the incorporation of local fishermen within the privately owned marina – is unique in Mexico.



Sailing near Los Cabos
Credit Cabo Sails

Despite this innovation, a coalition of international organizations, environmental lawyers, and grassroots groups, tried to stop construction of the Puerto Los Cabos Marina, arguing it would cause environment damage to the estuary, consume large quantities of scarce fresh water, create huge waste issues, and dislocate a number of local communities. Opponents of the project state that many of the town's former residents sold out and have moved away. In 2006,

²⁴⁸ Esteban L. Biondi, "Pautas y Medidas de Manejo para el diseño, construcción y operación de marinas," in *La Evaluación de Impacto Ambiental: Guía para Proyectos Turísticos en Zonas Costeras*, edited by D. Zarate Lomeli et. al., SEMARNAT, forthcoming.

²⁴⁹ Correspondence with Esteban Biondi.

Greenpeace activists chained themselves to earth moving equipment in an unsuccessful effort to stop the marina dig. Opponents also accused the developer of exerting its political and economic influence to win approval and the government of failing to properly monitor the project's impacts. In fact, the master plan for the Puerto Los Cabos marina-resort complex was developed by FONATUR and then sold to Grupo Questro for development.²⁵⁰

Mexican Laws and Regulations for Marinas

In Mexico, the voluntary compliance norm for marinas (**NMX-AA-119-SCFI-2006**) "establishes requirements and criteria of environmental protection for site selection, design, construction and operation of marinas."²⁵¹ As far as site selection is concerned, the Mexican norm contains explicit statements regarding protecting corals and other endangered flora and wildlife, as well as choosing physical sites that minimize sedimentation and dredging, have good hydrodynamics, and avoid dredged channels.

The Mexican norm also includes design and construction criteria that focus on avoiding or minimizing impacts on ecosystems and biodiversity, especially as it relates to marina flushing, water quality, dredging, and wave protection structures.

Further, the norm contains six criteria that focus on pollution prevention measures from runoff, oil, solid waste disposal, and boat maintenance activities:

1. "The marina must have operating policies that include environmental protection measures that vessels, boaters, and employees must comply with.
2. Environmental protection measures should include, at a minimum, the following:
 - Prohibition of inadequate urban solid waste disposal
 - Standards for integral waste management
 - Efficient fuel storage systems that prevent drips and spills into the water or on land.
 - Rules for the management of paint, solvents, and fiberglass.
 - Standards for repair procedures with measures necessary to avoid the leaking of oil and hydrocarbons into the water or ground.
 - Environmental protection measures for the cleaning of boats
3. Within the project's limits, there must be signage prohibiting the dumping of waste into the water.
4. Whenever boats are being cleaned, biodegradable-cleaning products must be used.
5. The integral management of solid urban wastes and the management and disposal of wastewater that conforms to applicable regulations. In no cases will waste be disposed of in open water, near aquatic ecosystems, or on the ground.
6. Marinas must have visible signage indicating the location of restrooms and solid waste disposal facilities."

This recommendation is not legally enforceable, but provides a guideline that SEMARNAT could use to evaluate projects and permit conditions. However, this document is not intended to

²⁵⁰ Conaway, "Is Baja on the Block?" *National Geographic Traveler*, 2008; Correspondence with Biondi.

²⁵¹ NMX-AA-119-SCFI-2006, "Establishing the Requirements and Criteria of Environmental Protection for Site Selection, Design, Construction, and Operation of Marinas."

assess comprehensive sustainability issues, as described in the sections below, and provides only general guidelines.

In addition, three laws contain mandatory regulations that are relevant to marina design and construction. SEMARNAT is legally bound to enforce these laws:²⁵²

- **Ley General del Equilibrio Ecológico y la Protección al Ambiente (LGEEPA)**
Environmental Impact Assessment
- **NOM-022-SEMARNAT-2003**
Protection of Mangrove Areas
- **Artículo 60 de la Ley General de Vida Silvestre**
Protection of mangroves in areas of marina development

Marinas are built on areas that include concessions from the federal government because they require use of beach land within the Federal Maritime Terrestrial Zone (Zona Federal Marítimo Terrestre or ZoFeMaT).²⁵³ In Mexico, all marinas are required by law to offer boat ramps open to the general public, but since this generates little revenue compared to other activities, there is little incentive for the marina owner to build these ramps efficiently and to provide adequate space for boat trailer parking.

Good Practices in Site Selection, Design, Building, and Operation of Marinas

The planning process for marinas requires a holistic approach and the objectives of the process must be clearly understood by all team members. Biondi proposes that there are three levels of objectives in the planning and development of a marina.²⁵⁴ The first level is to comply with adequate technical design guidelines and all regulations, including environmental impact studies and monitoring. This objective is always stated, commonly understood, and usually achieved (even if not yet always achieved in Mexico, as mentioned above). The second level is to achieve economic and financial viability of the marina. The third level is that the project becomes the stage of authentic experiences for the guests, and offers opportunities for direct benefit to the local community. These two conditions are closely intertwined, since the local community has the best potential to offer memorable, authentic, and personalized guest experiences. This third level, however, is very rarely proposed and is almost never achieved. The full achievement of all three levels of marina planning and design are required in order to implement the principles to sustainable tourism to marina planning.²⁵⁵

Key elements in the planning process for marinas include six areas of assessment: a) market analysis, b) physical planning (for on land and in ocean areas), c) environmental and social impact assessments, d) engineering assessments, e) legal and regulatory assessments, and f) economic and financial assessments.²⁵⁶

²⁵² Dirección de Planeación de Urbana et al, *Guía del Desarrollador* 2009.

²⁵³ Federal Maritime Land Zone in Mexico, <http://www.mexicolaw.com/LawInfo30.htm>.

²⁵⁴ Esteban L. Biondi, "Planeamiento de Marinas: Experiencia Internacional para América Latina," VI Congreso Argentino de Ingeniería Portuaria, Seminario Latinoamericano: Desarrollo Sustentable de la Infraestructura Portuaria Marítima y Fluvial en América Latina, Buenos Aires, Abril 2010.

²⁵⁵ Correspondence with Esteban Biondi.

²⁵⁶ Biondi, "Planeamiento de Marinas," 2010.

Physical planning of the marina project calls for constant dialogue between experts on both the water side and the land side of the marina project. This is especially true in large-scale marina projects integrated within a resort or a bigger tourism development.

The typical problems addressed by engineering studies in this phase include the planning and design of marine works such as breakwaters, dredging, reclamation, edge structures, floating and fixed docks, etc. Coastal engineering studies usually required are wave studies, storm surge analysis, agitation in the marina basin, sediment transport, basin flushing, etc. While there are well-established practices to carry out engineering studies for marinas, Biondi contends that problems often arise when a solution is sought for an engineering problem that is not correctly presented due to inconsistencies with physical planning considerations, environmental constraints, or business feasibility.²⁵⁷

The environmental and social impact assessment of the marina is a key aspect of planning, and each country has its own legal and regulatory framework. When compensation or mitigation is required, Biondi briefly lists techniques that have been used, such as coral relocation, mangrove and sea grass planting, sediment bypass programs, or forced water circulation in marina basins or canals.²⁵⁸

In addition to these provisions, there are other important criteria that are regarded as best practices for site selection for marina infrastructure. These include giving preference to:²⁵⁹

1. Sites in naturally protected locations that are deep and navigable so as to minimize the need of dredging and breakwater construction.
2. Sites that have already been impacted.
3. Sites that allow adequate development of needed inland infrastructure, so as to prevent or minimize the need for land reclamation.
4. Sites that allow for infrastructure placement away from valuable resources, minimize boat traffic near valuable resources, and facilitate boat traffic among locations of nautical interest.
5. Sites that are well integrated with the surroundings (or other sectors in the master plan) physically, functionally, and economically so as to avoid or minimize conflicts among uses (i.e. swimming, water sports) as well as visual and acoustic conflicts.

There are a number of guidelines that should be followed to help mitigate impact. The *Developer's Guide to Sustainable Coastal Development in Baja California Sur*,²⁶⁰ for instance, lists the following steps to mitigate impact:

- Marina outlets shall not be placed within 2000 meters of coral structures, 1000 meters of mangroves, or 500 meters from existing non-mangroves estuaries. If a coral structure or mangrove is encountered during construction, immediately contact the Dirección de Planeación Urbana y Ecología BCS.
- Prior to development on the marina site a geotechnical engineer contracted by the developer shall make an assessment of existing **geologic conditions** and prepare a detailed report documenting these conditions.

²⁵⁷ Biondi, "Planeamiento de Marinas," 2010.

²⁵⁸ Biondi, "Planeamiento de Marinas," 2010.

²⁵⁹ Biondi, "Pautas y Medidas de Manejo," 2011.

²⁶⁰ *Guía del Desarrollador*, pp. 26-27.

- All **boat** launching facilities shall be located in areas away from sensitive benthic habitat with a minimum 20 m buffer.
- Marina structures shall be sited such that natural water exchange is not impeded.
- Wherever feasible, new marinas and their associated development shall be located in areas of existing marina uses, to **avoid disturbance** of pristine habitats.
- **Dredging** activities shall be prohibited during breeding periods for sensitive or protected wildlife, which will be determined by the required Environmental Impact Assessment (EIA).
- There shall be no direct discharge from live-aboards or emptying of onboard waste storage tanks in the marina vicinity or open water. **Pump-out facilities** shall be provided at all fuel docks, with proper maintenance and disposal under the responsibility of the marina operator.

Another of the handbooks on sustainable marina construction is the *Guide to Good Environmental Management Practices for Marinas in Mexico* by the Coastal Resources Center in Rhode Island. Most of the recommendations included in this handbook have been tested and proven throughout the world as effective ways of insuring that recreational boating and marina development remains environment-friendly.²⁶¹

Another very thorough handbook, the *Guide of Good Practices in Marina Management (Manual de Buenas Prácticas de Manejo de Marinas)*²⁶², published by SEMARNAT in 2004, includes chapters on “Planning, Design, and Construction of Marinas” that provides useful guidelines. The manual says that during dredging, “In protected natural areas a geo-synthetic net should be used to prevent the dispersion of sediments”²⁶³. The handbook also says that erosion control methods should be non-structural wherever possible – like taking care of vegetation, creation and restoration of estuaries, or, if physical means must be used, non-structural ones like “geotextiles, screens for the dispersion of swells supported by floating breakwaters” should be used.²⁶⁴

An additional concern is accidental spills of combustible and other toxic chemicals. The *Guide of Good Practices* says, “Little spills of combustible are frequent in service stations due to excessively full deposits, therefore dripping and splashing of the pier or water is frequent”²⁶⁵ and goes on to say these can be prevented with the right equipment and regular training on how to use it.

Certification Programs for Marinas

There are two major voluntary certification programs that promote good practices for marinas. The **Clean Marina Program**²⁶⁶ is an incentive-based program promoted since 1993 by the US

²⁶¹ Pamela B. Rubinoff and Martha Patricia Celis Salgado, *Guía Técnica de Buenas Prácticas Ambientales para la Operación de las Marinas Turísticas en México*, Coastal Resources Center, Narragansett, Rhode Island, 2005, <http://www.crc.uri.edu/mxgmp/files/Definicion.pdf>.

²⁶² Antonio Cantu Díaz Barriga con la participación del Grupo de Trabajo de Marinas de La Paz, *Manual de Buenas Prácticas de Manejo de Marinas*, SEMARNAT, Instituto Nacional de Ecología y Conservación, México, 2004.

²⁶³ *Manual de Buenas Prácticas*, p. 25.

²⁶⁴ *Manual de Buenas Prácticas*, pp. 23-24.

²⁶⁵ *Manual de Buenas Prácticas*, pp. 25-26.

²⁶⁶ Clean Marina Program, <http://coastalmanagement.noaa.gov/marinas.html> and cleanmarinas@noaa.gov; NOAA, "Why is the Clean Marina Program Important?" 2011, <http://coastalmanagement.noaa.gov/marinas.html#2>.

National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA). This program encourages marina operators and recreational boaters to protect coastal water quality from polluted runoff by engaging in environmentally sound operating and maintenance procedures. It includes measures or guidelines on fish waste management, public education, sewage facility maintenance, and boat operation. Over 110 marinas have been certified in the U.S., and California has also certified one marina in Mexico under their own-administered Clean Marina Program. (See case study below)

Internationally, the **Blue Flag Program**²⁶⁷ is the most widely used certification program for the clean and safe management of beaches and marinas. Started in France in 1981 and is run by the non-governmental, non-profit organization FEE (Foundation for Environmental Education), it is today found in 44 countries around the globe. Some 3,009 beaches and 639 marinas that have been awarded the Blue Flag. The program does not exist in Mexico.

Blue Flag's 24 criteria for operating marinas are divided into 4 sections: Environmental Education and Information, Environmental Management, Safety and Services, and Water Quality. The environmental management criteria covers sustainable practices for hazardous waste disposal, recycling, bilge water pumping, and prevention of pollutants entering sewage systems, marina land, and water or natural surroundings. All Blue Flags are only awarded for one season at a time. If some of the imperative criteria are not fulfilled during the season or the conditions change, the Blue Flag will be withdrawn.

Playas Limpia is a voluntary clean beach certification program under SEMARNAT and based on norm NMX-AA-120-SCFI-2006. By late 2011, there were 40 certified beaches in ten tourism destinations in six coastal states, but this program does not certify marinas.²⁶⁸

As the number of boaters and marinas increases, the environmental impact of marina operations on water quality, biodiversity, and coral reefs is becoming increasingly significant. For this reason, the implementation of environmentally sound management practices for marinas and yacht clubs has become imperative to the health of coastal ecosystems.

Although existing certification programs measuring clean operation of marinas are extremely important, they do not address the siting, planning, design, and construction stages. The certification programs that start once the marina is built are necessarily based on the limitations already embedded in the facility. The real evaluation of environmental and social sustainability of a marina project can only be conducted when "the three levels" proposed by Biondi²⁶⁹ (or another matrix based on the comprehensive implementation of sustainable tourism principles) is considered. A comprehensive marina sustainability certification program should consider every step of the planning and development process, starting with the siting and the conceptual

²⁶⁷ Blue Flag Marina Program, <http://www.blueflag.org/Menu/Criteria/Marina+Criteria>.

²⁶⁸ Instituto Nacional de Ecología, "Programa Integral Playas Limpias (PROPLAYAS)," 2004, internal SEMARNAT documents cited in Corina Warfield, Juanito Rus, Ian Hart, and Josh Bode, "Improving Coastal Water Quality in Mexico," Goldman School of Public Policy, University of California, Berkeley, June 2004; SEMARNAT, "Sistema de Monitoreo de Calidad del Agua en Playas Prioritarias," 1 Noviembre 2011, http://www.semarnat.gob.mx/playas/playas_prioritarias/Paginas/SistemaPlayasPrioritarias.aspx; correspondence with Biondi.

²⁶⁹ Biondi, "Planeamiento de Marinas," 2010.

planning of the project, and should include “third level” guidelines and metrics to assess social and economic sustainability, in addition to “first level” environmental issues.

Case Study: Paradise Village Marina and Yacht Club, Nuevo Vallarta, Mexico: Environmental Management

The Paradise Village Marina and Yacht Club, located in Nuevo Vallarta, is the first and only certified “Clean Marina” in Mexico. Certified in 2005 by the state of California’s Clean Marinas Program,²⁷⁰ Paradise Village Marina underwent a thorough review of environmental practices – an evaluation process that costs a modest \$500 fee and must be reviewed every five years. To become certified, marinas are evaluated based on a ‘Score Sheet’ where they must fulfill 100% of those best practices that are required by U.S. federal, state, city or port regulations, as well as a minimum of 75%²⁷¹ of other non-legally binding good practices.



Paradise Village Marina and Yacht Club
Credit: Paradise Village

In order to comply, Paradise Village Marina has implemented a number of initiatives in the areas of: emergency management, petroleum containment, topside boat maintenance and cleaning, underwater boat hull cleaning, marina and yacht club operations, marina and yacht club debris, boat sewage discharge, disposal of solid, liquid and fish waste, disposal of hazardous materials, management of storm water run-off, and the implementation of environmental education programs.

For example, in order to comply with good practices in petroleum containment, Paradise Village Marina has adopted a written fuel and oil spill prevention and containment plan and also prohibits the use of detergents and emulsifiers on fuel spills. In order to fulfill good practices in “marina and yacht club operations,” Paradise Village Marina personnel conduct or attend emergency spill response procedures training; prohibit bicycles, motor scooters and motorbikes to be ridden or stored except in designated areas; prohibit unattended open containers of paints and other maintenance supplies on the docks; store all liquid marina or yacht club supplies indoors or in covered containers; and use absorbent materials or other environmentally friendly methods to clean spills. These are only a few of the small steps that Paradise Village has taken towards “greening” its activities as part of the Clean Marina program.

Clean Marina certification has made business sense as well. Evidence indicates that many boaters prefer certified clean marinas because they greatly value clean and healthy coastal waters for recreation and fishing. In fact, studies prove that those certified as Clean Marinas have fewer vacancies and are able to charge more for their slip fees.²⁷² Certainly, it is no coincidence that *Pacific Coast Sportfishing Magazine* named Paradise Village Marina as the ‘Best

²⁷⁰ “Clean Marinas,” www.cleanmarina.org.

²⁷¹ The goal of 75% compliance is due to the fact that not all components of the scoring elements are applicable to every marina

²⁷² NOAA, “Why is the Clean Marina Program Important?” 2011, <http://coastalmanagement.noaa.gov/marinas.html#2>.

Marina in Mexico' in 2009.²⁷³ Its unique classification as the only certified green 'clean marina' in Mexico sets Paradise Village Marina apart from its competition, ultimately giving it a comparative advantage in a market which is increasingly catering to a growing consumer demand for green products.

²⁷³ Paradise Village Marina & Yacht Club, <http://www.paradisevillagemarina.com/>.

Golf Courses

Introduction

“Golfing has become one of the fastest growing and most important segments of Mexico's tourism industry,” states an online site advertising golf in Mexico. “Billions of dollars are being spent to make world class golfing destinations. Recent surveys show that Mexico is the second most popular golfing destination after the U.S.” There are over 150 golf courses in Mexico²⁷⁴ distributed throughout the 30 states and the Federal District. Nearly 34% of the golf courses in Mexico are at beach resorts, while 25% are in or near cities catering to business and leisure tourists.²⁷⁵

Golf courses have become standard components of tourism developments. According to the Minister of Tourism (SECTUR), FONATUR has promoted golf by introducing it as an amenity in tourism development areas.²⁷⁶ New FONATUR projects continue to include golf courses. For instance, FONATUR's EIA and Cost-Benefit Analysis for the ambitious 10-stage, 50-year project near Marismas Nacionales (referred to as CIP Costa Pacifico) included three golf courses: two 18-hole to be built in Stages 2 and 8 and one 9-hole to be built in Stage 3, with the possibility that additional golf courses can be built as components of the all-inclusive hotels.²⁷⁷



Credit: www.verona.eu

Golf is, however, not a sport played by Mexicans. According to a SECTUR study, “In comparison with other sports, golf in Mexico has developed very little. It has not been a major source of revenue because it attracts few [Mexican] players and enthusiasts.”²⁷⁸ SECTUR says that while an estimated 12% of the population in the U.S. (26.7 million people) play golf at least occasionally, in Mexico golfers account for just 0.21% of the total population. And a mere 0.05% of Mexican tourists go on vacation with the intention of playing golf, and 0.052% play golf on business or leisure trips.²⁷⁹

²⁷⁴ “Mexico Golfing,” MEXBOUND.com, <http://www.mexbound.com/mexico-golfing.php>.

²⁷⁵ “Comportamiento y Tendencias del Golf en Mexico,” *SECTUR Reports*, November 2010. p. 12.

²⁷⁶ “Comportamiento y Tendencias del Golf en Mexico,” 2010.

²⁷⁷ Krantz and Honey, “Assessment of FONATUR's EIA for the CIP Costa Pacifico.” Through public forums and written documentation, NGOs, community groups, and academic and legal experts raised questions about the sustainability of the CIP project. SEMARNAT subsequently scaled it back to one golf course and one, rather than two, marinas. Both of these changes are pending authorization by the water authority, CONAGUA, that there is sufficient water in the aquifer of the Rio Baluarte. Secretaría de Medio Ambiente y Recursos Naturales, Subsecretaria de Gestion para la Proteccion Ambiental, Direccion General de Impacto y Riesgo Ambiental, Resoluvito CIP Costa Pacifico, February 9, 2011.

²⁷⁸ SECTUR, Executive Summary, “Golf in Mexico: Golfing Trends and Behavior in Mexico,” http://www.sectur.gob.mx/en/secturing/sect_8985_golf_in_mexico.

²⁷⁹ Joaquin Armenta Gómez, Deputy Director for Business Tourism Development, SECTUR, “Golfing Trends and Behavior in Mexico,” SECTUR, 36 pages, 2001.

Golf courses in Mexico cater to tourists and retirees, mainly from the United States. The SECTUR study states that 90% of foreigners playing golf in Mexico are from the U.S., and 5% are from Canada.²⁸⁰ Therefore, in evaluating the importance and impacts of golf courses in Mexico, it is especially important to understand the trends and preferences of North Americans towards golf, both vacationers and retirees.

Consumer Demand

In the U.S., the country that sends the most tourists to Mexico, *consumer interest in golf has been declining for more than a decade*. The number of Americans who play golf has either decreased or remained stagnant each year since 2000, according to the National Golf Foundation (NGF) and the Sporting Goods Manufacturers Association. The number of so-called “core players” in the U.S. -- those who play at least eight games per year – dropped from 17.7 million in 2000 to 15 million in 2006, and to 12-13 million in 2007.²⁸¹

Beginning in 1990, supply -- building of new courses in the U.S. -- began to outpace growth in demand. In recent years in the U.S., the growth of golf course supply has slowed to net zero, meaning “the number of openings and closings are close to cancelling each other out, resulting in a static number of total facilities.”²⁸² In 2008, more golf courses closed than opened in the United States.²⁸³

These trends away from golf are being reflected in some new resort developments in the United States that are being built without golf courses (and some other conventional amenities such as tennis courts) and with more emphasis on protecting and enjoying nature, according to a 2006 *New York Times* story entitled “Vacation Homes: Seeking Birds, Not Birdies.” The article quotes U.S. developer Jim Chaffin who says plans for his 400 home sites near Hilton Head, S.C. were originally zoned for three golf courses. “And we asked,” recalled Mr. Chaffin, ““Did we need one golf course, let alone three?””²⁸⁴

Yet, despite these trends, most resort developments in the Caribbean and Latin America continue to include golf courses. Recently the Cuban government, which had shunned golf, approved plans for four golf courses totaling more than \$1.5 billion, with a dozen more planned for the future. As the *New York Times* notes, these joint ventures with private developers mark an about face for the socialist government: one of Fidel Castro’s first acts upon taking power in 1959 was to “get rid of Cuba’s golf courses” which were seen “as the epitome of bourgeois excess.” The new golf resorts in Cuba include plans to build vacation homes around the greens that foreigners will be permitted to buy. The golf resort projects are primarily aimed at Canadian, European, and Asian tourists, but when the U.S. finally lifts its travel restrictions to the island, Mexico and other markets are expected to face stiff competition for the U.S. tourism market from Cuba.²⁸⁵

²⁸⁰ Gómez “Golfing Trends and Behavior in Mexico.”

²⁸¹ Paul Vitello, “More Americans are giving up golf,” *The New York Times*, February 21, 2008, <http://www.nytimes.com/2008/02/21/nyregion/21golf.html>.

²⁸² Joseph F. Beditz and James R. Krass, *A Strategic Perspective on the Future of Golf*, National Golf Foundation, Florida, 2007.

²⁸³ Richard Haass, “The Geopolitics of Golf,” *Newsweek International*, September 14, 2009, p. 19.

²⁸⁴ Joanne Kaufman, “Vacation Homes: Seeking Birds, Not Birdies,” *The New York Times*, October 6, 2006.

²⁸⁵ Randal C. Archibold, “Revolutionary Cuba Now Lays Sand Traps for the Bourgeoisie,” *The New York Times*, May 24, 2011.

Despite the continuing growth of golf courses in the Caribbean and Latin America, the indications are that U.S. vacationers overseas are no more likely to play golf than they are in the United States. Building more golf courses is, therefore, unlikely to significantly increase tourism. *In both Mexico and Costa Rica, for instance, only 2% of international tourists play golf during their holiday.* Most of these players are from the United States.²⁸⁶ Costa Rica's dozen courses are very underutilized. This has led one enterprising website, "Golf in Costa Rica", to make lemonade from lemons by proclaiming: "Proudly, we offer some of the world's least crowded golf courses."²⁸⁷

The situation is similar in Mexico. According to the SECTUR study, "In Mexico, golf is a complementary tourist activity that has developed in leisure and vacation resorts, or in business and transit (border) areas, as an additional attraction. This could have something to do with the lack of demand, as golfers prefer playing in cities rather than on the coast, because of the weather and wind conditions." Yet, as stated above, nearly 34% of Mexican golf courses are located at beach resorts, while only 25% are in cities.²⁸⁸

In addition, U.S. golfers don't give high marks to Mexico's fairways. *Conde Nast Travelers'* 2010 golf resort survey conducted by "zealous" U.S. golfers lists the world's top 80 golf resorts. Only three were in Mexico: Esperanza in Cabo San Lucas, Hilton Los Cabos Beach & Golf Resort, and Moon Palace Golf & Spa Resort in Cancun.²⁸⁹ This would indicate that even though U.S. golfers are Mexico's main market, U.S. golf enthusiasts do not view Mexico as an important golfing destination.

Surveys indicate that the same is true for U.S. retirees in Mexico. A 2009 study by the International Community Fund (IFC) of U.S. retirees in coastal communities in Mexico found that more enjoy fishing (30%) and bird watching (15%) than playing golf (14%). The majority of respondents prefer to just walk on the beach (77%) or relax (71%). One of the study's authors, Anne McEnany states, "Conventional wisdom suggests that U.S. retirees have a preference for golf but our data suggests otherwise." And the study's key recommendations include: "Re-think emphasis of real estate development projects with golf courses as a key amenity."²⁹⁰

Real Estate Speculation

Given near invisible interest among Mexicans and falling U.S. consumer demand for golf, it seems pertinent to ask: Why have golf courses become standard components of tourism developments? The answer appears to have more to do with real estate speculation than meeting consumer/tourist demands. In the U.S., according to a book on golf industry trends, future golf course "development will be driven mainly by real estate... In 2006, nearly 70% of openings were connected with real estate developments."²⁹¹

²⁸⁶ Honey, Vargas, and Durham. *Costa Rica: Summary Report*, p. 15; "Comportamiento y Tendencias del Golf en Mexico," 2010; CREST research using SECTUR statistics for Mexico.

²⁸⁷ "Golf in Costa Rica," website: <http://www.golfincostarica.com/>.

²⁸⁸ Gómez, "Golfing Trends and Behavior in Mexico," p. 12.

²⁸⁹ "Top 80 Golf Resorts," *Conde Nast Traveler*, June 3 2010, <http://www.concierge.com/cntraveler/articles/502615>.

²⁹⁰ Anne McEnany, International Community Foundation, "Housing and Real Estate Trends Among Americans Retiring in Mexico's Coastal Communities," presentation given at the World Bank, Washington, DC, May 27, 2010; Kiy and McEnany, *U.S. Retirement Trends: Lifestyle Priorities*.

²⁹¹ Beditz and Krass, *Future of Golf*, 2007.

In Costa Rica, where less than 2% of international tourists play golf on their holiday, golf courses are categorized in master plans as “green space” and the rule of thumb is that condos and other vacation and retirement homes around a fairway can command a 20% higher price.²⁹² Similarly, in Cuba, developers say that putting housing complexes around the golf greens is intended “to increase profits.”²⁹³

According to the SECTUR study, “In Mexico, golf has always been closely linked to the real-estate market.”²⁹⁴ Indeed, the CIP Costa Pacifico project describes one of its types of housing as “residential golf” i.e., built around a course. Its three golf courses appear primarily designed to increase real estate value and not to meet consumer demands of either vacationers or retirees.²⁹⁵ Like the U.S. developer quoted above, FONATUR needs to ask, “Does the CIP Costa Pacifico need one golf course, let alone three?”

Environmental and Social Impacts

In addition to low U.S. tourist and retiree demand for golf in Mexico, golf courses also often cause negative environmental and social impacts, especially in coastal areas. Golf originated in Scotland, a country with plenty of rain and thick green grass, and a range of problems are particularly apparent when courses are built in drier regions. These include:

- **Water Consumption:** Golf courses, the largest source of water consumption in tourism projects, demand extremely high (and, in some cases, unsustainable) amounts of water for irrigation and can strain the water supply of local communities. It is estimated that 9.5 billion liters of water are used to irrigate the world’s golf courses per day, equivalent to the daily needs of 80 per cent of the global population.²⁹⁶ Turf requires an average of 25 to 60 inches (63.5 cm to 152.4 cm) of water annually, depending on climate, to maintain a healthy appearance.²⁹⁷ In Thailand, one golf course uses an average of 6,500 cubic meters of water per day, the same amount as used by 60,000 villagers.²⁹⁸ In Costa Rica, a typical golf course uses as much water per day as a town of 5,000 to 10,000 persons.²⁹⁹ In some coastal areas where water is scarce, local communities have launched protests against golf courses and large resorts.³⁰⁰



²⁹² Honey, Vargas and Durham, *Costa Rica: Summary Report*, p. 15.

²⁹³ Archibold, “Revolutionary Cuba,” *The New York Times*.

²⁹⁴ “Comportamiento y Tendencias del Golf en Mexico,” *SECTUR Reports*, November 2010.

²⁹⁵ Krantz and Honey “Assessment of FONATUR’s EIA for the CIP Costa Pacifico.”

²⁹⁶ Tourism Concern, 2010, quoted in Lawrence Pratt, *Towards a Green Economy*, UNEP, 2011, p. 418.

²⁹⁷ Alliance for Water Efficiency, “Golf Course Water Efficiency Introduction,

“http://www.allianceforwaterefficiency.org/golf_course.aspx.”

²⁹⁸ The Water Information Program, “Water Facts,” <http://www.waterinfo.org/resources/water-facts>.

²⁹⁹ Honey, Vargas, and Durham, “Costa Rica: Summary Report,” 2010, p. 14.

³⁰⁰ Charlene Music and Peter Jordon, directors, “Cracking the Golden Egg,” documentary film produced for CREST, January 2010.

- **Habitat Loss:** Destruction of natural habitats through clearing of native vegetation and changes to topography. Research shows that fairways, greens, and bunkers are less able to support native wildlife than environments left in their natural state. Courses also create barriers between populations of indigenous plants and animals and impede corridors for migratory species, thereby jeopardizing the long-term sustainability of native wildlife.
- **Soil and Aquifer Contamination:** The large-scale application of fertilizers, insecticides, pesticides, coloring agents, and fungicides to golf course greens can be harmful to the environment, as well as to wildlife and humans. Studies have shown that the typical course uses 22,680 kg. of chemicals each year, roughly seven times the amount used in large-scale agriculture. Courses that use imported grasses require larger doses than those that use naturally occurring turf. Runoff can contaminate nearby water supplies, effecting people and wildlife alike.
- **Cultural Degradation:** Courses and corresponding developments drive real estate prices up, making land unavailable to local and indigenous peoples. They also create separate enclaves segregated from the larger community and culture.³⁰¹

These and other problems have had an impact of public attitudes towards golf courses in Mexico. According to the SECTUR study, “In the last few decades, golf courses have been shunned by several areas of society, as it has been publicized that they cause environmental and social risks.”³⁰² On occasion, citizen efforts to stop golf courses have led, in Mexico and other countries, to violence. In 1996, for instance, several residents were killed or arrested in protests over a new Jack Nicklaus golf course and residential development slated to be built on communally owned land in Tepoztlan, located 45 miles southeast of Mexico City. As a result, the project was stopped.³⁰³

Good practices in site selection, design, building, and operation of golf courses

As is also the case with good practices for hotels and vacation homes, developers need to undertake careful environmental planning and management of golf courses to ensure that they are consistent with the structure and function of the ecosystems involved. Good environmental practices for golf courses in warm, coastal areas include the following measures:³⁰⁴

- **Minimizing the clearing of vegetation,** using native vegetation for landscaping.
- **Using seashore paspalum (*paspalum vaginatum*) for turf,** a warm-climate species of perennial grass which tolerates potable and salt water as well as a wide variety of recycled water (alternative, grey, effluent, non-potable, residual, brackish). It requires a minimum amount of pesticides and a reasonable dose of fertilizers; is very effective in

³⁰¹ Mark Readman, “Golf Tourism,” in *Sport and Adventure Tourism*, edited by Simon Hudson, Binghamton, NY: Haworth Hospitality Press, 2003, pp. 165-201; Kit Wheeler and John Nauright, “A Global Perspective on the Environmental Impact of Golf,” *Sport in Society*, 9, 2006, pp. 427-443.

³⁰² Gómez, “Golfing Trends and Behavior in Mexico,” p. 1.

³⁰³ James David Fahn, *A Land on Fire*, Westview Press, Cambridge, MA, 2003, p. 53.

³⁰⁴ GPPA consulting firm, “Estrategia para Diseno y Gestion Ambiental de Proyectos Turisticos Costeros,” GPPA internal document, Mexico, 2010.

using and renewing critical nutrients; can be used time and time again thanks to its leaf texture, quality and wear tolerance on greens, tees, fairways and roughs of golf courses; is widely used in areas susceptible to hurricanes; is very suitable to stabilize floors and dunes; and is a rapid-growth species whose extensive root system enables it to withstand the wear and tear caused by intensive use.

- **Irrigating with recycled waters** coming from gray water or from a wastewater treatment plan carrying out tertiary treatment and disinfecting.
- **Using “friendly chemicals”**, including biodegradable fertilizers and pesticides or non-biodegradable ones with short-term toxicity span.

In addition, *The Developer’s Guide for Baja California*, also includes a list of specific environmental and social good practices for golf course development, including:³⁰⁵

- “Golf courses shall not exceed a maximum use of 20% potable water to meet all irrigation demands. Eighty percent or more should therefore be greywater, sewer water or saltwater.
- Irrigation on all unused or minimally used portions of the property shall be eliminated.
- Natural wildlife habitat must be maintained on at least 75% of all out of bounds portions of the property.
- Trees, shrubs and flowers (excluding turf grass) native to the local ecological region shall be utilized, at minimum, for 80% of plantings within all landscaped areas.
- Golf courses shall be designed to minimize to the greatest extent possible their impact on existing cultural resources, wildlife habitats and the natural environment.”

Certification Programs

There are several certification programs and best practice standards that promote more sustainable development of golf courses. One of the oldest is “Committed to Green”, a program developed in Scotland and today used throughout Western Europe.³⁰⁶ The programs most relevant for Mexico include:

- **The IDB’s Sustainability Scorecard for Tourism Projects:** This relatively new tool designed to set criteria for projects which receive financial support from InterAmerican Development Bank (IDB) provides some performance indicators for golf courses. Criterion D.1.7 states: *“Golf courses will be designed, built, and operated according to international best environmental practices to ensure the least possible impact on soil, aquifers, and marine areas, as well as the protection of wildlife. In particular measures will be taken into account to (a) reduce water consumption, (b) prevent contamination*

³⁰⁵ Direccion de Planificacion Urbana et. al., *A Developer’s Guide*, 2009.

³⁰⁶ Federation of European Golf Greenkeepers Association, http://www.fegga.org/main/site_flash2/.

of the soil and aquifer, (c) use low-toxicity agrochemicals, (d) as well as to ensure the conservation and comprehensive management of ecosystems and biodiversity.³⁰⁷

- The User's Guide to the IDB Scorecard recommends that the main source for best practices in the sustainable design, construction, and operation of golf courses is **Audubon International**, a non-profit organization based in the U.S. Audubon International has developed two voluntary certification programs – one for new and one for existing golf courses -- to promote the implementation of best industry practices in the United States and internationally:
- **Audubon Signature Program (ASP)** is a planning assistance and sustainable management program for new golf courses. The standards used include wildlife conservation and habitat enhancement, waste reduction and management, energy efficiency, water conservation, water quality management and monitoring, and integrated pest management. As the website explains, "A project that meets the minimum requirements is designated a Certified Audubon Cooperative Signature Sanctuary. Levels of certification—Gold, Silver, or Bronze—are determined based on meeting pre-determined 'credits' in the program that go above and beyond the requirements for certification."³⁰⁸
- **Audubon Cooperative Sanctuary Program (ACSP)** is an education and certification program for existing golf courses. The standards used include Environmental Planning, Wildlife and Habitat Management, Chemical Use Reduction and Safety, Water Conservation, Water Quality Management, and Outreach and Education. "By implementing and documenting environmental management practices in the above areas," explains the website, "a golf course is eligible for designation as a *Certified Audubon Cooperative Sanctuary*, improving its stature and reputation." At present, only two golf courses in Mexico—Cozumel Country Club and El Camaleon at the Mayakoba Resort have been certified by Audubon International under this program.³⁰⁹

Case Study: El Camaleón, Mayakoba Resort, Playa del Carmen

El Camaleón golf course³¹⁰ is part of the Mayakoba Resort, a tourism complex in the Maya Riviera that currently includes 3 high-end hotels: Fairmont Mayakoba, Banyan Tree Mayakoba, and Rosewood Mayakoba. Its 18-hole championship golf course, which opened in 2006, was designed by Greg Norman with technical and environmental support from the Mexican consulting firm GPPA. Since 2007, it has been the site of the only official PGA Tour Event (the Mayakoba Golf Classic) held annually outside the US or Canada.

³⁰⁷ The IDB Sustainability Scorecard for Tourism Projects and its User's Guide can be accessed both in English and Spanish at <http://www.iadb.org/tourismscorecard/index.cfm>.

³⁰⁸ Audubon International, "Audubon Signature Program," <http://signature.auduboninternational.org/>.

³⁰⁹ Audubon International, "Audubon Cooperative Sanctuary Program for Golf Courses," <http://acspgolf.auduboninternational.org>.

³¹⁰ "El Camaleón at the Mayakoba Resort," http://www.gngcd.com/course_detail.php?course_id=7.

From the start of construction in 2004, El Camaleón worked to meet Audubon International criteria. According to Erin Stevens, Superintendent of the golf course, “We built our entire maintenance facility to environmental specifications, designed a contained drainage and



El Camaleón golf course
Credit: www.mayakoba.com

reclamation system for the golf course, conserved water, reduced fertilizer and chemical applications, and created a multitude of environmental buffers and corridors for native wildlife.” Stevens says that “from the start of this project to the present” it has been “amazing to see the vast increase in wildlife, migratory birds and even the Wood Stork, which is on the endangered species list.”³¹¹

El Camaleón became the second Mexican golf course certified under the Audubon Cooperative Sanctuary Program. Its good practices, some of which go beyond Audubon’s criteria, include:

- It is built just on 54 hectares within a vegetation matrix of jungle, mangroves, and sand dunes. Most 18-hole golf courses take up between 70-100 hectares.
- It uses *paspalum vaginatum* for turf because of its high tolerance to brackish water, so it minimizes the amount of water needed for irrigation.
- It uses environmentally friendly chemicals, including ones that are biodegradable or have short-term toxicity.
- It is constructed on a waterproof layer of compacted “sascab” (local decomposed limestone), so the fertilizers and pesticides used to keep the turf healthy can neither infiltrate nor contaminate the soil or the aquifers.
- The golf course is irrigated with treated water from the resort wastewater treatment plan.
- To prevent any contamination of the aquifer from chemicals or recycled wastewater, the course has a drainage system with leads and discharges surface runoff and surplus treated wastewater into the mangrove conservation areas. An environmental monitoring program is in place to control and look after the health of the mangrove.
- Its unique drainage system increases the productivity of the mangroves and helps assimilate nitrogen and phosphorus above 90%, thus reducing risks of soil and aquifer contamination in and around the resort. Treatment of wastewater through the use of mangroves is unique and has contributed considerably to the improvement of the ecosystem, including wildlife habitat.³¹²

³¹¹ “El Camaleón Mayakoba Recognized for Environmental Excellence,”
http://www.gngcd.com/news_item.php?news=66&course_id=7.

³¹² Alafita, et al, *Reflexiones y Acciones para el Desarrollo Turístico Sostenible*, 2006.

El Camaleón also runs several programs designed to bring benefits to the local community:³¹³

- Its educational program, Golf Para Todos,³¹⁴ provides free golf classes to members of the local community. On average, over 700 people of all ages, backgrounds, and skill levels participate each month.
- The Mayakoba Golf Classic has raised about \$1 million over four years for various local and national charities.
- It organizes charity tournaments to help the Teletón Foundation for Disabled Children.

³¹³ OHL Desarrollos, "El Desarrollo Turístico Mayakoba: Un proyecto innovador del turismo de México," power point presentation, May 2011.

³¹⁴ Golf Para Todos, www.golfparatodos.org.

Annex I: UNWTO Indicators of Sustainable Development for Tourism Destinations

UNWTO's 2004 publication *Indicators of Sustainable Development for Tourism Destinations: A Guidebook*, offers a wide range of ways to measure sustainability in tourism. Below is a compilation of recommended baseline indicators compiled by the UNWTO with several additional indicators selected by the Center for Responsible Travel. The full Guidebook is available for purchase at www.unwto.org.

Baseline Issue	Suggested Baseline indicator(s)
Sustaining tourist satisfaction	<ul style="list-style-type: none"> • Level of satisfaction by visitors (questionnaire-based) • Perception of value for money (questionnaire-based) • Percentage of return visitors
Tourism seasonality	<ul style="list-style-type: none"> • Tourist arrivals by month or quarter (distribution throughout the year) • Occupancy rates for licensed (official) accommodation by month (peak periods relative to low season) and % of all occupancy in peak quarter or month) • % of business establishments open all year • Number and % of tourist industry jobs which are permanent or full-year (compared to temporary jobs)
Economic benefits of tourism	<ul style="list-style-type: none"> • Number of local people (and ratio of men to women) employed in tourism (also ratio of tourism employment to total employment) • Revenues generated by tourism as % of total revenues generated in community
Energy management	<ul style="list-style-type: none"> • Per capita consumption of energy from all sources (overall, and by tourist sector – per person day) • Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques • % of energy consumption from renewable sources (at destinations, establishments)
Water availability and conservation	<ul style="list-style-type: none"> • Water use: (total volume consumed and litres per tourist per day) • Water saving (% reduced, recaptured or recycled)
Drinking water quality	<ul style="list-style-type: none"> • Percentage of tourism establishments with water treated to international potable standards • Frequency of water-borne diseases: number/percentage of visitors reporting water-borne illnesses during their stay
Sewage treatment (wastewater management)	<ul style="list-style-type: none"> • Percentage of sewage from site receiving treatment (to primary, secondary, tertiary levels) • Percentage of tourism establishments (or accommodation) on treatment system(s)
Solid waste management	<ul style="list-style-type: none"> • Waste volume produced by the destination (tones) (by

(Garbage)	<p>month)</p> <ul style="list-style-type: none"> • Volume of waste recycled (m3/Total volume of waste (m3) (specify by different types) • Quantity of waste strewn in public areas (garbage counts)
Development control	<ul style="list-style-type: none"> • Existence of a land use or development planning process, including tourism • % of area subject to control (density, design, etc.)
Controlling use intensity	<ul style="list-style-type: none"> • Total number of tourist arrivals (mean, monthly, peak periods) • Number of tourists per square metre of the site (e.g., at beaches, attractions), per square kilometer of the destination, - mean number/peak period average.
Area protected, and to what degree	<ul style="list-style-type: none"> • Existence of protected area(s) at the destination • Extent of protected area(s) – square km (classified by level of protection, according to IUCN categories).
Contamination events which may harm the health of bathers or damage coastal ecosystems particularly marine fauna, fragile reef and coastal wetland systems, shellfish and fish habitat). Gradual degradation of water quality from cumulative effects of industrial, urban, tourism or agricultural effluents	<ul style="list-style-type: none"> • Level of contamination of seawater (fecal coliforms, campylobacter); • Level of contamination of seawater (heavy metals); • # days beach/shore closed due to contamination events • Turbidity of water (simple tests) • Alternative proximity indicators where laboratory testing is difficult <ul style="list-style-type: none"> • Frequency of algal blooms • Counts of dead fish or birds on shore • Frequency counts of indicator species which are particularly vulnerable (sponges, corals, sea-urchin)
Climate change impacts on seashores	<p>Value of tourism infrastructure in coastal zone below estimated maximum storm surge levels or equivalent</p> <p>Value of damage annually due to storm events or flooding</p> <p>% of tourist area and infrastructure with sea defenses (could be classed by level of protection)</p>