Sustainable tourism makes business and economic sense

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• Dependency of tourism on ecosystems
  – Ecosystems sustaining tourism
  – Ecosystem Services
• Current Trends and Impacts
• BAU vs. SEM
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A vast area...full of treasures

World’s most tourism dependant region

MPA marked in yellow
Coastal and Marine Tourism

- One of the largest tourism segment worldwide (3 S, cruise, diving, whale watching)
  - 20 million tourists in 2012 (+ 20 million cruise passengers)
- Contributes to the Caribbean Economy
  - >30% of GDP in 10 countries (~70% in at least 4)
  - 6 million jobs (30% of the working population)
- Antigua-Barbuda, Aruba & Anguila employs 80% labor force
Ecosystems Sustain Tourism

- Takes place in various ecosystems
- Ecosystems generate benefits
- Services: recreation, coastal protection, seafood, materials etc.
Annual economic benefits of coral reef goods and services
(“Reefs at Risk Revisited”; World Resources Institute 2011)

- **Tourism:** $2.7 Billion
- **Fisheries:** $395 Million
- **Shoreline protection:** $944 Million to $2.8 Billion
Recent trends increase the fragility of Caribbean tourism

• The global economic upheaval of the last years
• Growing competition from more nature-focused destinations
• Tourism growth numbers and $ leveling off
Current Trends and Impacts

Overfishing/LBSP/Climate Change

State of the Reef System

Reef condition

2011

2000 2050 2100

Status Quo
• By 2006 ~50% of seafood consumption came from imports (FAO, 2009)
• 1% increase in tourist arrivals causes a 1.17% increase in seafood imports (Nguyen & Jolly, 2010)
• Cost 8 countries $ 44 million (1987); $ 266 million (2010)
Shore Protection

- >20% of Caribbean coastline protected by coral reefs
- 307 (46%) of Caribbean resorts vulnerable to a 1m increase in sl (Simpson et al 2010)
- 80% of tourists in Bonaire and Barbados unwilling to pay same price if the environmental quality is diminished (Uyarra, 2005)
Hotels threatened by beach erosion

Source: Simpson et al. 2010
What is BAU?

Actual tourism model that frequently involves intensive use of ecosystem services and exceeding nature’s capacity to sustain the current level and quality of services enjoyed by the sector.

What is SEM?

A model that emphasizes policy changes centered on the wise use of scientific data and quantitative research to ensure sustained production for ecosystems goods and services.

BAU and SEM represent opposite ends of a continuum.
The Tourism Life Cycle contrasting BAU with SEM (Drumm 2011, based on Butler 2006)
Comparing BAU and SEM Management practices for the tourism sector

<table>
<thead>
<tr>
<th>ACTUAL OUTCOMES</th>
<th>CONVENTIONAL TOURISM (BAU)</th>
<th>SUSTAINABLE TOURISM (SEM)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Land clearance and habitat conversion</td>
<td>Financial mechanisms to sustain ecosystem services</td>
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<td></td>
<td>Draining of wetlands, freshwater bodies and aquifers</td>
<td>Capacity building in sustainable practices</td>
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<td>Pollution and sedimentation of sea grasses and coral reefs.</td>
<td>Monitoring of ecosystem</td>
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<td>Intensive use of chemical fertilizers and pesticides</td>
<td>Tourism mgmt. capacity</td>
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<tr>
<td></td>
<td>Expensive man-made coastal protection and beach replenishment.</td>
<td>No overuse / dependency on chemical fertilizers and pesticides.</td>
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</table>
Comparing BAU and SEM Management practices for the tourism sector

<table>
<thead>
<tr>
<th>Results of chosen actions</th>
<th><strong>CONVENTIONAL TOURISM (BAU)</strong></th>
<th><strong>SUSTAINABLE TOURISM (SEM)</strong></th>
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<tr>
<td></td>
<td>Increased vulnerability to sea level rise.</td>
<td>Increased resilience to CC</td>
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<td>Beach erosion.</td>
<td>Coastal and beach protection</td>
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<td>Water pollution</td>
<td>Improved sea water quality</td>
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<td>Biodiversity loss</td>
<td>Increased coastal-marine biodiversity</td>
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<td>Receding reefs</td>
<td>Carbon fixation (sea grass, mangroves and reef)</td>
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<td>Declining visitor satisfaction and WTP</td>
<td>Sustained, affordable local fresh sea food supply.</td>
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<td>High level of visitor satisfaction/spending.</td>
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Transitioning to a Sustainable Approach to Coastal Tourism

Policy
- The OECS - Common Tourism Policy
- *Caribbean Challenge* – an effort for protecting and managing marine and coastal resources of the region.

Investing in ecological infrastructure
- Wave attenuation – 66% (reef crest); 85% (whole reef) – Pending publication Mike et al.
- Cost of hard engineering in tropical areas - $1,284 m$^{-1}$ -- $189,075$ m$^{-1}$
- Cost of reef restoration - $2$ m$^{-2}$ to $900$ m$^{-2}$
Transitioning to a Sustainable Approach to Coastal Tourism

**BAU**

**Loss of mangroves**
- Cancun - 20,000 has.
- Bavaro, Dominican Republic - 500 ha plus wetlands, lagoons and dunes removed for beach hotel complexes

**Degraded reefs**
- DR - due to fertilizer and pesticide run off from golf courses, and sedimentation from artificial beaches.

**SEM**

**Sustainable management**
- Maho Bay, USVI: Guest cabins built within existing tree cover. Elevated walkways reduce soil erosion on sedimentation on reef.

**Restoring reefs**
- Punta Cana Resort and Spa has joined efforts with the University of Miami and Counterpart International to develop an in-water pilot “Coral Garden” nursery.
Reef condition

Ecosystem Restoration + Threat Abatement
Threat Abatement Alone
Status Quo
Recommendations for Action

Regional
• Establish harmonization of environmental and tourism legislation and fiscal incentives
• Create a tourism observatory for research, monitoring of economic and ecosystem impacts

Destination
• Create and prioritize National Sustainable Tourism Development Strategies, inc. Integrated coastal zone management.
• Establish national priority programs to monitor reef health
• Implement tourism-based mechanisms to fulfill commitment to Sustainable Finance for conservation
Recommendations for Action

Tourism Businesses

• Support governments in regional/destination initiatives.
• Adopt Ecosystem Services Review to manage risks/opportunities by modifying business practices.
• Fund PES to insure investments at all nature-based destinations
• Establish programs to collect visitor donations in support of ecosystem protection
• Hotels apply IUCN Principles for Siting and Design of Hotels and Resorts in the Caribbean
• Orbitz, Trip Advisor and Expedia, Travelocity engage the consumer to address awareness needs regarding destinations and environmental performance.
Financial Analysis

Sectoral Scenario Analysis (SSA) comparing the associated economic costs/benefits of BAU tourism vs. SEM tourism for a period of years
The Gap – why we need an integrated model/analysis

- To understand the impact of interventions within the tourism sector and across sectors
- To address not only economic, but social and environmental impacts
- To analyze cross-sectoral benefits
- Synergies can be created, and side effects avoided, if a systemic approach is adopted.
"How come we're getting less tourists, when we've done so much to make getting here more convenient?"