Climate Change and the Tourism and Financial Sectors

Risk Management Seminar for the
Tourism and Financial Sectors

March 5-7, 2002

Barbados

The Facts

- **GCC has emerged in the past few years as one of the world's major long-term challenges**

- **The Caribbean is at risk!!**

- **We are even experiencing climate change effects In the Caribbean Already!!**

Perhaps the most serious environmental challenge facing Caribbean SIDS as a result of global climate change is sea-level rise, with associated coastal erosion and salt water intrusion, an escalation in the frequency and intensity of hurricanes and typhoons, and disruptions in precipitation and fresh water supply.

Findings of The IPCC TAR

- **Avg. surface temperature increased by 0.6 +/- 0.2^0C over 20^{th} Century**
- **Projected average surface temperature increased by 1.4 – 5.8^0C by 2100 relative to 1990**
- **Global average sea level rise projected to increase by 0.09 to 0.88m by 2100**
- **Warming will vary by region**
- **Increase and decrease in precipitation**
- **Changes in climate variability**
- **Changes in frequency and intensity of some extreme climate phenomena - droughts, floods**

Evidence of Increased Temperature

- **Thawing of permafrost**
- **Shrinkage of glaciers**
- **Later freezing and earlier break-up of ice on rivers and lakes**
- **Lengthening of mid-high latitude growing seasons**
- **Poleward and altitudinal shifts of plant and animal ranges.**
- **Earlier flowering of trees, emergence of insects and egg laying in birds.**

Natural Systems Vulnerable to Climate Change

- **Natural systems at risk:**
  - **Glaciers**
  - **Coral reefs**
  - **Mangroves**
  - **Boreal and tropical forests**
  - **Polar and alpine ecosystems**

Natural Systems Vulnerable to Climate Change

- **Human systems at risk:**
  - **Water resources**
  - **Agriculture (esp. food security) and forestry**
  - **Coastal zones and marine systems**
  - **Human settlements**
  - **Energy**
  - **Industry**
  - **Insurance and other financial services**
  - **Human health**

Some Projected Adverse Effects

- **Crop yield reduction in most tropical and sub-tropical regions**
- **Reduced water availability particularly in sub-tropics**
- **Increase in number of people exposed to vector-borne and water borne diseases and increase in heat stress mortality**
- **Increase in risk of flooding for many human settlements - increased precipitation and sea level rise**
- **Higher energy demand for space cooling**

Consequences for the Region

- **Increased water temperature**
  - **Bleaching of coral reefs**
- **Other**
  - **Enhanced ENSO events – drought / flood**
  - **Increased intensity and frequency of storms**
  - **Impacts on health, agriculture, water, tourism, human settlements**

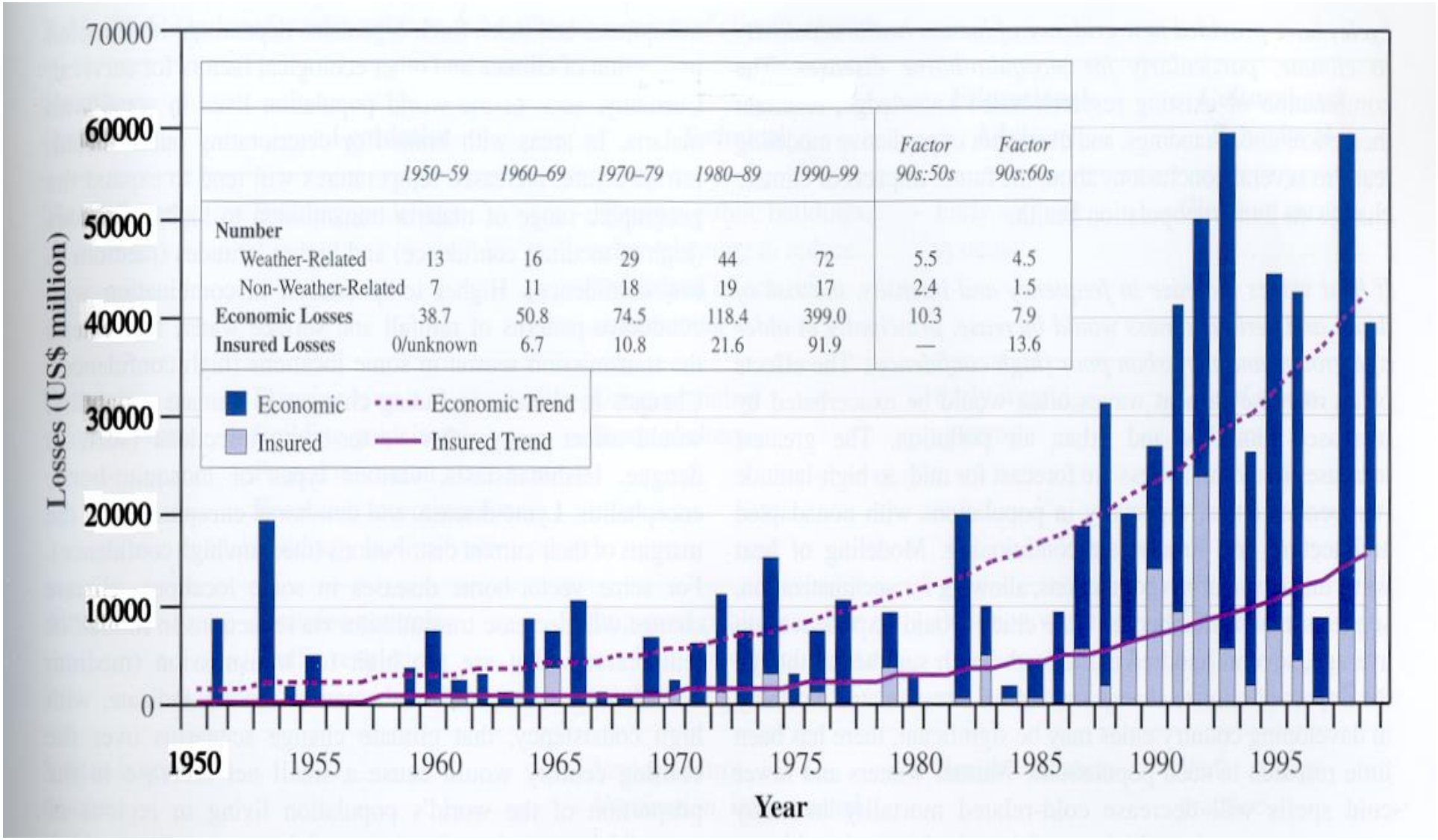
Consequences for the Region

- **Sea level rise**
  - **Inundation of low lying coasts**
  - **Beach and shoreline erosion**
  - **Loss of mangroves / wetlands**
  - **Accentuated storm surge leading to increased infrastructural damage**
  - **Salt water intrusion**

Insurance and Other Financial Services

- **Global economic losses from catastrophic events increased 10.3 fold from 3.9 billion US dollars per year in 1950's to 40 billion US dollars per year in 1990's.**
- **Insured portion of losses increased from negligible level to 9.2 billion US dollars per year in same periods.**
- **Total costs two times larger when losses from small non-catastrophic weather-related events included.**
- **Increased costs partially due to:**
  - **increased population**
  - **increased wealth**
  - **increased urbanization in vulnerable areas**
  - **climatic factors - increased precipitation and flooding**

Decade Comparison (losses in US$ billion, 1999 values)



	1950–59	1960–69	1970–79	1980–89	1990–99	Factor 90s:50s	Factor 90s:60s
Number							
Weather-Related	13	16	29	44	72	5.5	4.5
Non-Weather-Related	7	11	18	19	17	2.4	1.5
Economic Losses	38.7	50.8	74.5	118.4	399.0	10.3	7.9
Insured Losses	0/unknown	6.7	10.8	21.6	91.9	—	13.6

Source: Technical Summary of IPCC Working Group II

Insurance and Other Financial Services

- **Climate Change and anticipated changes in weather related events perceived to be linked to climate change would increase actuarial uncertainty in risk assessment.**
- **Increase in insurance premiums**
- **Certain risks deemed uninsurable**
- **Withdrawal of coverage**

Response presents complex challenges but also opportunities

- **Trends to increase robustness**
- **Integration of insurance with other financial services**
- **Increasing firm size**
- **Diversification**
- **Improved tools to transfer risk**

Note

- **Property/casualty insurance and reinsurance segments very vulnerable. Individual companies already experienced catastrophe-related bankruptcies triggered by weather events.**
- **Banking industry as a provider of loans also vulnerable. However sector transfers risk back to insurers.**
- **Some potential response options**
- **Support for government regulations:**
  - **Building codes**
  - **Set-backs**
  - **Energy efficiency measures**
  - **Disaster mitigation**

Role of Insurance Industry

- **Ability to adapt to changing risk conditions – vulnerable if climate change risk not taken into account**
- **Assessing developments incorrectly could jeopardize future of entire industry in some regions**
  - **Premium adjustments lag behind loss trends**
- **Industry can protect itself against consequences while at the same time promoting measures to protect against climate impacts and gain acceptance for them.**
- **Sector has effective instruments for encouraging risk reduction – has to involve customers / public authorities as partners**

Action by Industry

- **Industry must assume major role in implementing protective measures, so as to ensure that it can provide long-term cover for natural hazards.**
- **Some possible actions:**
  - **Integrate climate change into Risk Management regime, using:**
    - **Climate change projections / forecasts**
    - **Vulnerability maps**
    - **Outputs from climate models**

Action by Industry

- **Work with governments to promote risk mitigation / management schemes**
  - **Building codes**
  - **Set-backs**
  - **Flood and drought relief funds**
  - **Adequate reinsurance schemes for hurricane damage**
  - **Financial packages with property owners**
  - **Support for retrofitting**
  - **Supporting regional approach to policy directions**
  - **Insist on being part of the stakeholders who review EIA processes and ensure the climate change considerations are taken on board for major infrastructural works**
  - **Regional Health Insurance Scheme**

Tourism in the Caribbean

- **One of the most important economic sectors for most Caribbean states, and dominant in many of the smaller islands**
- **Attraction to the Caribbean is particularly strong for those who come from countries that experience with harsh winters**
- **The paradox of tourism is that it can destroy the very environment on which it depends**
- **Beach-based tourism has given rise to the increase of large hotel establishments along the coasts**

Existing Problems Resulting From Tourism Are:

- Water pollution
- Air pollution
- Noise pollution
- Visual pollution
- Waste disposal problems
- Ecological disruption
- Environmental hazards
- Land use problems

Contribution of Tourism to Caribbean Economies

•Tourism has made indisputable contributions to the economies of the region, through:

- Revenue (contribution to GDP)
- Jobs
- Foreign investment
- Infrastructure development
- Increased local support for environmental amenities

This Climate-sensitive Industry Is Vulnerable to GCC in the Following Ways:

- **It is highly dependent on natural resources of the region**
- **Encroachment of tourism infrastructure on beach zone in some areas**
- **Concentration of tourism-related infrastructure in selected sections of the coast inmost territories**
- **Uncontrolled and often ill-conceived development projects**

Possible effects of GCC include:

- **Further loss of beach to accelerate erosion and inundation**
- **Loss of amenity value**
- **Salinization of freshwater aquifers due to sea level rise (for most islands, ground water is the only source of potable water)**
- **Increased stress on coastal ecosystems from land-used pollution, storm water run-off and siltation**
- **More intense weather activities destroying coastal zones**
- **Massive losses from infrastructure damage (Every year, damage from seemingly stronger storms, cause millions of dollars of damage in the Caribbean)**

Possible effects of GCC include:

- **Increased costs for reinsurance and other cost-recovery methods**

- **Structural damage to cruise ship ports (Hurricane Lenny in 1999, that approached the Caribbean from the West, totally destroyed cruiseship ports in St. Vincent and St.Kitts)**

- **Damage to coral reefs (high ocean temperatures result in coral bleaching. Corals can recover from short bleaching spells but prolonged or recurring bleaching can cause them to die. Reefs provide protection to the shoreline and are the home to a great biological diversity of marine ecosystems. They have become a very important tourist attraction in the region)**

Possible effects of GCC include:

- **Increased potential for the resurgence of vector-borne diseases which immediately serve as a deterrent for visitors.**
- **Threat to long-term sustainability of industry (This has implications for economies who are heavily dependent on revenue from tourism. Other important sectors may have reduced budgetary allocations)**

Actions by Industry

- **Enforce beach protection policy**
- **Develop ecotourism policy (product diversification)**
- **Reinforce legislation governing cruise shipping**
- **Develop initiatives to diversify product**
- **Develop integrated and participatory approach to tourism**
- **Enhance environmental policy for hotels / attractions**
- **Maintain moderate tourism growth in order to allow sufficient time to properly plan and develop the area and to monitor and control environmental impacts.**
- **Various techniques should be applied to reduce seasonality as much as possible**