Trends and Challenges for the Americas in addressing Climate Change - the Caribbean case

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CLIMATE CHANGE IN THE CARIBBEAN

- Caribbean region already vulnerable to risks arising from climate hazard :
  - Weather extremes leading to e.g. floods, drought, landslides
  - Hurricanes
- These events can be attributed to present day climate variability

CLIMATE CHANGE IN THE CARIBBEAN

- Climate change has now emerged as a major environmental hazard globally.
- Strong scientific evidence for climate change and attribution to anthropogenic causes – IPCC WG1 FAR.
- Also evidence that climate change will exacerbate existing impacts of climate variability.

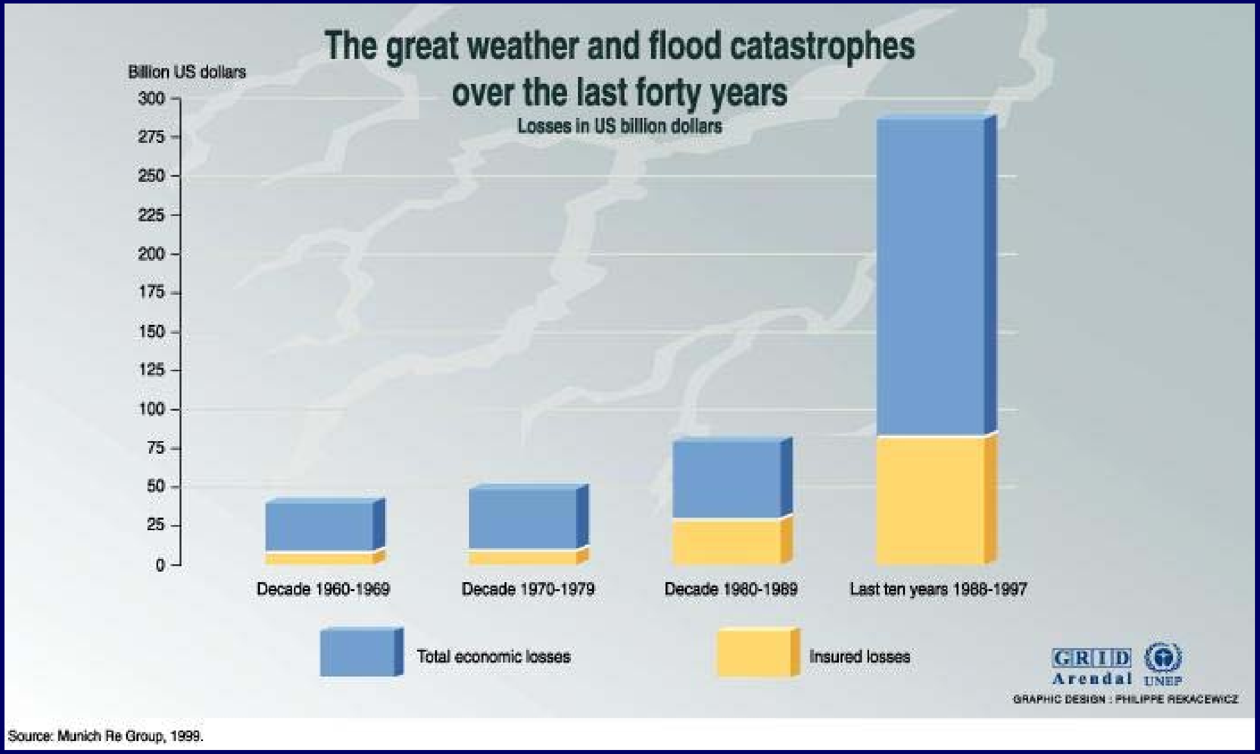
IPCC FOURTH ASSESSMENT REPORT

- Eleven of last twelve years (1995-2006) among 12 warmest on record.
- Total temp. >> from 1850-2005 is 0.76 **º C.**
- BAU scenario will likely result in warming of 2 to 4.5 **º C**. Best estimate 3 **º C**.
- Global SLR in 20th century estimated to be 0.17m. Global avg. sea level in last interglacial period was likely 4 to 6m higher than during 20th century(3 to 5 **º C** warmer)
- Tropical cyclones will intensify – higher peak winds & more intense precipitation
- >> acidification of oceans – pH reduced by about 0.14 - 0.35 units

CLIMATE TRENDS IN THE CARIBBEAN

- Mean temp. increase for past 3 decades
- By end of 1970's a significant warming detected in lower part of atmosphere
- Significant >> in minimum temp.(1.4 **º C** since 1960)
- 2 **º C** decrease in diurnal temp. range for region.
- No. of warm days in region >>, no. of cold nights <<.
- Frequency of droughts >> since 1960 (Cuba)
- Frequency of occurrence of extreme events changing- Flooding & hurricane passage > in 1990's

TRENDS IN DAMAGE



RECENT PROJECTIONS FOR CARIBBEAN REGION

- Annual warming by 2080's of between 1 and 5 ^{o} **C**.
- Greater warming in NW Caribbean than in E Caribbean.
- Greater warming in summer months than in cooler traditionally drier earlier months of the year.
- Drier Caribbean basin in annual total by 2080's
- Wetter wet season & drier dry season.(from May – October 25 % drier)
  - 16/24 simulations suggest a wetter Caribbean (up to 28% wetter) in Dec.- Jan.- Feb..
- Summer drying more severe i.e. during the Caribbean wet season.
  - 20/24 simulations suggest drier Caribbean (up to 60% in most severe case) in Jun. – Jul. – Aug

Indicative impacts

- Impact studies on vulnerable elements – some indications :
  - Less precipitation - less available water;
  - Changing weather patterns – agriculture adversely affected.
  - Sea level rise – coastal inundation, storm surge exaggeration (tourism, aquifers, agriculture, infrastructure, human settlement)
  - Increased intensity of hurricanes (human settlements, tourism, infrastructure, livelihoods.
  - Increased temperature (agriculture, health, coral reefs)

IMPACTS

Dire consequences for

- Economic activities
  - Tourism
  - Agriculture
  - Financial sector
- Property and infrastructure
- Human welfare
- Livelihoods
- Regional natural resource base
- Attainment of MDGs in prescribed time frame.
- Indeed for realization of sustainable development goals.

ECONOMIC IMPACT

- The 2005 HURRICANE SEASON

Guyana $465 M US Flooding
Guatemala $988 M US Rain & Trop.storm
Mexico $2,220 M US Emily,Wilma et al.
Cuba $1,400 M US Dennis
El Salvador $ 356 M US Stan, Rain
Total for 2005 - $5,409 M US

ECONOMIC IMPACT

Hurricane Ivan 2004

- Category 5. At the time, 5th most intense hurricane on record
- At the time 4th costliest hurricane to hit USA - $13 B – and $3 B in damage in the Caribbean.
- Struck Grenada as category 3 causing 39 deaths, damage to 85% of structures, agriculture wiped out.
- ECLAC estimated damage to be approximately 200 % Grenada GDP – estimate of growth significantly downscaled!!
- Jamaica - 20 deaths, damage to infrastructure and agriculture

Haiti – tropical storm Jeanne- over 3000 deaths, ravaged countryside from landslides and floods.

INSURED LOSSES

Storm	Class	Year	Estimated 1990 Insured Losses (000's)	Estimated 1990 Insured Losses if Maximum Wind Speed Increases by		
				5%	10%	15%
Hugo	4	1989	$3,658,887	$4,902,705 34%	$6,514,172 78%	$8,542,428 133%
Alicia	3	1983	$2,435,589	$3,382,775 39%	$4,312,884 77%	$5,685,853 133%
Camille	5	1969	$3,086,201	$4,120,733 34%	$5,438,332 76%	$7,095,008 130%
Source: Clark, 1997.						

STERN REPORT

- Action taken in next 10 or 20 years can have profound effect on climate in second half of this century and next.
- Mitigation must be viewed as an investment – cost incurred now and in coming few decades to avoid risks of very severe consequences in future.
- The benefits of strong early action considerably outweigh the costs.

STERN REPORT

- The benefits of strong early action considerably outweigh the costs.
- Evidence shows that ignoring climate change will eventually damage economic growth.
- Our actions over the coming few decades could create risks of major disruption to economic and social activity later this century and the next, on a scale similar to the great wars and the economic depression of the 1^{st} half of the 20^{th} century.

STERN REPORT

- It will be difficult or impossible to reverse these changes.
- Tackling climate change is a pro-growth strategy for the longer term, and can be done in a way that does not cap the aspirations for growth of rich or poor.
- The earlier effective action is taken, the less costly it will be

STERN REPORT

- Climate change presents very serious global risks and it demands an urgent global response.
- Response will require int. cooperation notably in following areas:
  - Creating price signals and markets for Carbon.
  - Spurring technological research, development and deployment.
  - Promoting adaptation particularly for developing countries

THE WAY FORWARD – SOME SUGGESTIONS

- Regional agreement to establish a Carbon trading and carbon pricing scheme.
- Regional agreement setting GHG emissions targets that would move regional agenda beyond Kyoto.
- Support regional/national capacity building to participate in CDM.
- Establish innovative regional adaptation funding mechanisms
- Promote holistic ecosystem based approach to environmental management.
- Support design of innovative insurance instruments for low income population.

THE WAY FORWARD – SOME SUGGESTIONS

- Advocacy at international political fora for greater attention to plight of developing countries.
- Serve as a forum for resolving issues in global debate (GRULAC) e.g adaptation funds, avoided forestry –
- Harmonisation of regional positions for post 2012 Kyoto regime debate.
- Support capacity building for adaptation and promote greater South-South cooperation in LAC countries.
- Support capacity building to enhance "knowledge based decision making" for adaptation.
- Ensure that climate change issues become an integral part of the OAS agenda – in this respect a lead role can be adopted by the Division of Sustainable Development
- For CARICOM countries greater visibility of the political directorate in global climate change debate.
- Facilitate greater integration between OAS energy, disaster management and climate change activities in region.
- Public Education and Outreach.

THANK YOU