

**Remarks on the Role of Coastal and Marine Resources
in Caribbean Sustainability Initiatives
CARIBBEAN/ICELAND HIGH LEVEL DIALOGUE**





F J McDonald
WW2BW Initiative
Fjm@cep.unep.org



The Cartagena Convention:
Facilitating Management of our

CARIBBEAN SEA
through the Caribbean Environment
Programme (CEP)

THE FIRST THING WE HAVE TO DO IS
GET ALL THOSE TREES AND BIRDS
OUT OF HERE AND BUILD YOU PEOPLE
SOME NICE CONDOMINIUMS!



NIKKI

**“Marketing Caribbean
Tourism is the same as
Marketing the Caribbeans
Environmental Quality”**







The Caribbean Environment Programme (CEP)



**Protocol Concerning
Co-operation in
Combating Oil Spills**

Adopted in 1983
In force since 1986

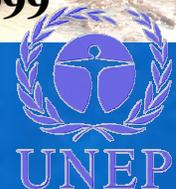
**Protocol Concerning
Specially Protected
Areas and Wildlife
(SPA W)**

Adopted in 1990
In force since 2000

**Protocol Concerning
Pollution from
Land-Based Sources
and Activities
(LBS)**

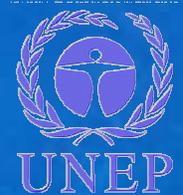
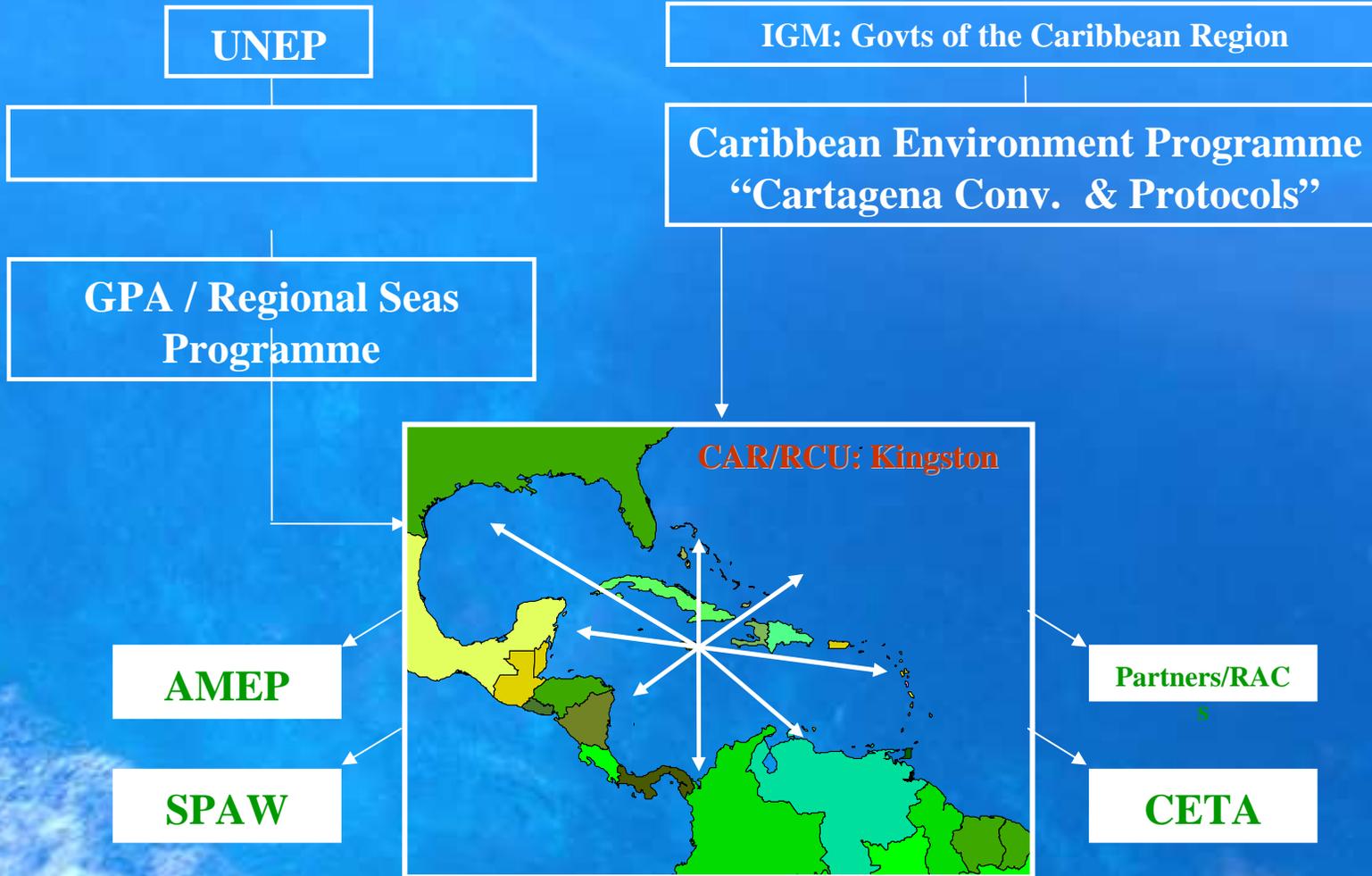
Adopted in 1999

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Caribbean Regional Coordinating Unit (UNEP-CAR/RCU)



Wider Caribbean “Eco”Region



UNEP CEP CAR/RCU: 25+ years

Focus: “Wider” Caribbean Region

Member States:

Antigua and Barbuda
Bahamas
Barbados
Belize
Colombia
Costa Rica
Cuba
Dominica
Dominican Republic
European Economic
Commission
France
Grenada
Guatemala
Guyana
Haiti
Honduras
Jamaica
Mexico
Netherlands
Nicaragua



Panama
St. Kitts and Nevis
Saint Lucia
St. Vincent and the
Grenadines
Suriname

Trinidad and Tobago
United Kingdom
USA
Venezuela

CONTEXT

- **1981: WCR with UNEPs support adopted the Caribbean Seas Action Plan within the context of the Global Regional Seas Programme (RSP) to jointly deal with the main environmental problems of the marine and coastal areas of the region.**
- **1983: Cartagena Convention provides the legal framework for all the activities carried out within the region for the protection of its marine and coastal environment.**
- **The Action Plan and the Cartagena Convention form the framework of the Caribbean Environment Programme (CEP).**

Technical Provisions

- Specific areas of focus in the Convention include:
 - pollution from ships
 - dumping of wastes
 - land-based impacts & sources
 - sea-bed activities
 - airborne pollution
 - specially protected areas and wildlife

The Wider Caribbean Region

- **Gulf of Mexico and Caribbean Sea (4 million Km²)**
- **Over 200 m people (>50% in CZ)**
- **Influenced by world largest rivers systems (Mississippi, Orinoco and Amazon rivers)**
- **High exposure to natural hazards**

The Region's diversity

- **Great geographical and political fragmentation**
- **28 States and 10 territories**
- **Both Common and Civil Law**
- **5 official languages**
- **Disparity in development and economies**
- **Diversity in the size of participating States ranging from small islands to continental states**

The Region's diversity

- **Very high biodiversity (continental States) partly due to the 'link' between N&S American land masses**
- **High level of insular endemism**
- **2nd largest Barrier Reef in the world (MesoAmerican (Belize) Barrier Reef –220 Km long)**
- **11% of world's corals in L Antilles**
- **19k Km² area covered by reefs (excluding USA)**

Major issues

- **GDP (~20%) from tourism –largest in the world (approx. 30m tourists/year)**
- **Cruise ship arrivals increasing annually (up to 600% for Belize in 2 yrs)**
- **Receives 60% of world dive tourism**
- **Reefs value calculated ~US \$50 billion**
- **Potential net benefits US \$663 m/yr (tourism and recreation) while US \$390 m/yr (fisheries)**

Major issues

- **22% corals already lost, a lot more threatened**
 - **diseases, bleaching,**
 - **overfishing**
- **Reef fisheries overexploited**
- **Only 10% sewage properly treated and 2- 16% of population on sewage systems**
- **Natural events impacts (hurricanes, storms, landslides, volcanic events etc)**
- **Over 300 MPAs established, less than 30% properly managed**

Reef Systems .. Major issues



- **Die-off of important algae eater**
- **Sustained heavy fishing**
- **Naturally occurring storms**
- **Chronic nutrient and sediment input from land**

Cont ..

- Lack of appropriate (strong) laws, regulations, enforcement systems and
- Weak CULTURE OF COMPLIANCE
- Extreme Events / Hazards
- Lack of CAPACITY, immature Risk Reduction systems and low Resilience
- **Challenges in FULL IMPLEMENTATION OF THE BPOA / Mauritius Strategy / MGDs**

Threats to **WCR Marine / Coastal Resources**

- Unmanaged expansion
 - Coastal settlements,
 - Coastal activities and facilities (incl Ports etc,)
 - Proliferation of tourist resorts and facilities
- Uncontrolled discharge of wastes into water bodies and the sea,
 - Municipal
 - Agricultural
 - Industrial
- Land Conversion, Expansion of aquaculture

In Shipping/Maritime Transportation...

- Release of ballast water
- Discharges of waste and other substances
- Lack of port reception facilities
- Need for oil spill prevention and preparedness



In Watersheds...

➤ **Globally, 80% of marine pollution derived from land-based sources**

- **Increased sedimentation/nutrients from deforestation and agricultural practices**
- **Destruction of wetlands and habitats**
- **Urban run-off and wastewater**



In Fisheries and Marine Ecosystems...

- **Overfishing**
- **Poorly managed aquaculture**
- **Destructive ecosystem practices**

Use of explosives

Unintentional bycatch

Bottom trawling



Courtesy Doug Perrine / Seapics.com

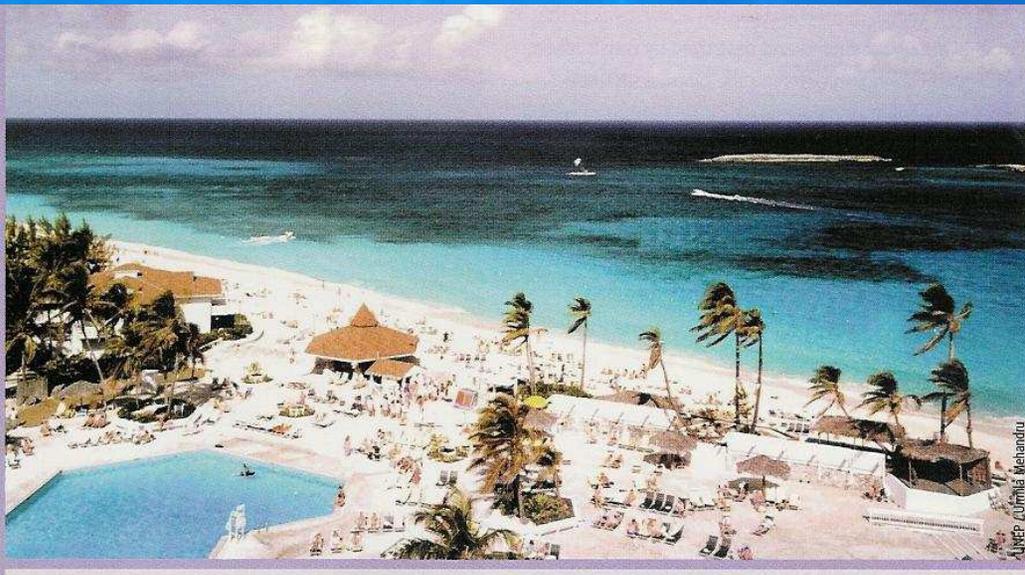


Loss of important habitats



In Tourism...

- **Direct discharge of sewage and waste water from coastal developments into the marine environment**
- **Loss of habitat and biodiversity**
- **Removal/destruction of key plant species needed to inhibit erosion**
- **Damage to coral reefs and other resources**
- **Lack of management guidelines**



EVOLUTION OF SD CAPACITY

- In the 25 years between 1981 – 2006 there has evolved a greater appreciation of the need for integrated approaches for the promotion and execution of policies, programmes, action plans and projects to ensure the conservation and sustainable use of resources and the regions natural endowment (incl but not confined to Coastal / Marine).,
- Attention to marine and coastal ecosystems remains the CORE of the CEP
- Many new actors, institutions, concepts and capacities related to conservation and sustainability have emerged in the Wider Caribbean as elsewhere.
- **Emerging consensus around IWCAM / Disasters / Risk & Resilience**

Converging SD related Initiatives : Responds to -

- Our exposure in the WCR to a range of challenges incl hazards + negative trends including energy costs etc;
- Urgent need to further develop resilient societies, appropriate coping capacities and mainstream sustainability, risk reduction strategies etc
- Shifting from Reactive to Proactive Measures
- Improve societal / sectoral 'Resilience'
- Commitments related to MEAs, BPOA and Mauritius Strategy
- Desire for 'Sustainable' Development; and
- Recommendations of key regional and global Fora, Conferences and Seminars over the past decade

The Cartagena Convention -- *a framework for co-operation:*

- **pollution from ships**
- **dumping of wastes**
- **land-based sources**
- **sea-bed activities**
- **airborne pollution**
- **wildlife & specially protected areas**

Convention for the Protection and Development of the Marine Environment of the WCR

- **1986 – Entered into force**
- ***Only legally binding, region-wide environmental agreement for the Wider Caribbean Region***
- **21 Parties of 28 possible from WCR**
- **Framework Convention with specificity provided by its Protocols**

WW2BW/IWCAM:

**Integrated Watershed and Coastal Area Management –
Ecosystem Based Management Initiatives**



WW2BW

 **Healthy, well-managed and productive watersheds and marine and coastal ecosystems that support stable and secure economies and livelihoods in the Wider Caribbean Region.**



WW2BW Initiative

A catalyst for:

Improving collaboration between governments, IOs, NGOs, and the private sector

Enhancing existing partnerships and promoting new partnerships

Capacity building/training

Promoting best practices

- integrated management procedures
- partnership models and principles





Land-based Sources of Marine Pollution in the Wider Caribbean Region

-- a call to action --



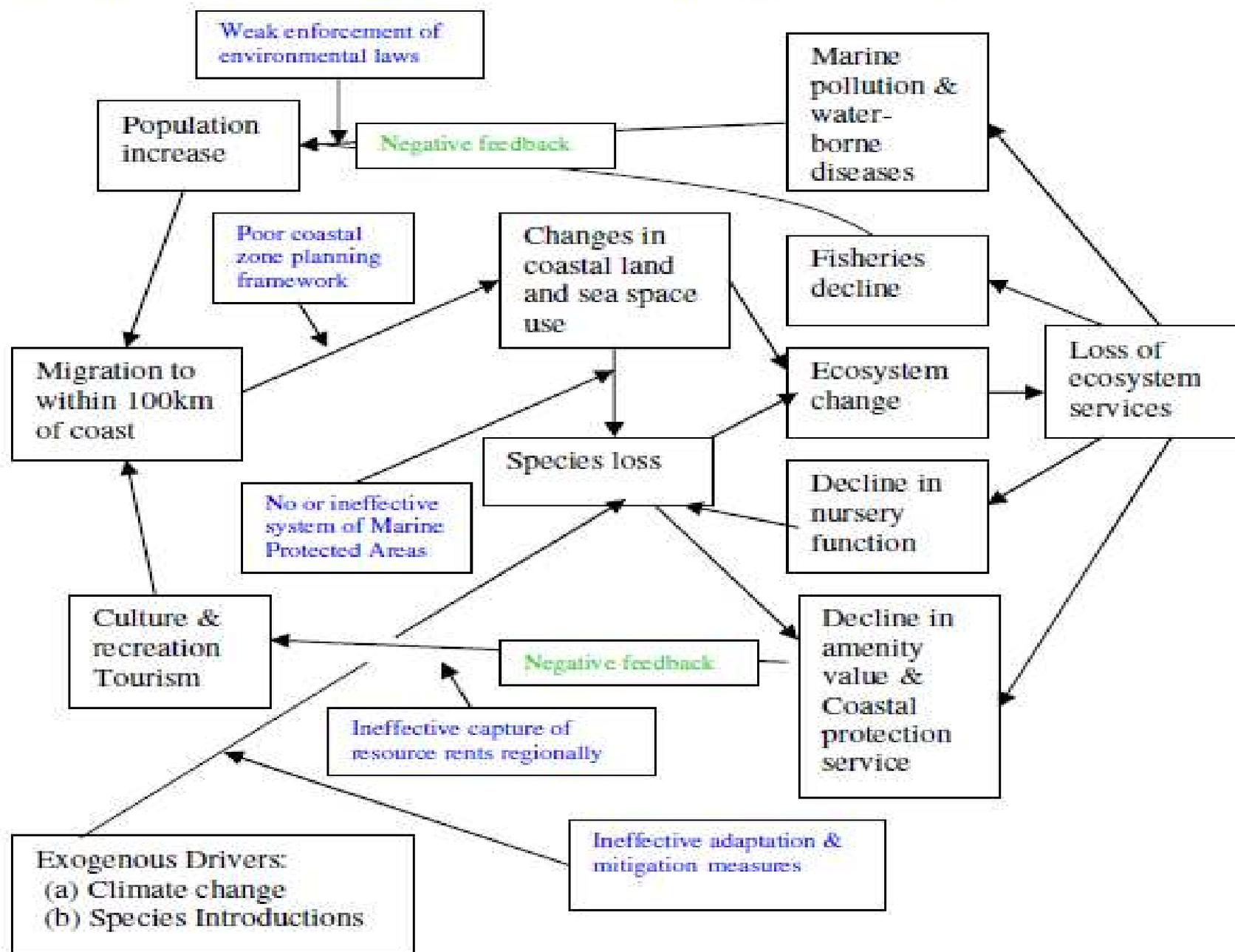
LBS / AMEP

- **To support the implementation of the LBS and Oil Spills Protocols and gain support for the programme in collaboration with the respective RACs.**
- **To assist countries in integrated environmental planning and management related to the use of coastal and marine areas and their resources.**
- **To assist the Governments in**
 - **the development and use of regulations,**
 - **economic instruments and**
 - **other measures necessary to prevent, reduce and control marine pollution,**
- **to provide relevant information to assist in improved decision making at the policy and technical levels.**

LBS Modalities

- IWCAM
- Environmental Monitoring
- Sustainable Agriculture
- Wastewater Treatment
- Restoring Contaminated Bays
- NPA / LBS (with the GPA)

Fig 4.3.1 Conceptual diagram illustrating interactions between drivers, mitigating factors, ecosystem services and human well-being in the Caribbean Sea



UWI Based Initiatives

- **SIDS University Consortium**
 - Mandated in Mauritius Strategy
 - Under active development
- **UWI Institute for Sustainable Development (ISD) - a regional 'portal' for a range of SD issues**
 - Resilience and Risk Reduction
 - Sustainable Tourism
 - Foresighting

University of the West Indies

- Geography and Geology
- Physics, Climate Change Modelling
- Marine Sciences
- Economics
- Sociology
- Engineering
- Agriculture
- Seismic Research Unit/Geothermal Unit
- Caribbean Institute of Mass Communications (CARIMAC)
- Centre for Gender & Development
- Caribbean Institute of Meteorology and Hydrology
- Centre for the Creative Arts
- Education
- Psychiatry and Community Medicine
- Law
- UWI Inst for Sustainable Development
- Sir Arthur Lewis Institute of Social and Economic Studies (SALISES)
- Caribbean Disaster Information Network (CARDIN)
- SIDSNET
- Centre for Environment Research and CERMES
- Institute of Education
- Social Welfare Training Centre

Draft ISD “VISION”

- To be a multi-disciplinary Centre of Excellence in the field of risk reduction, resilience, incident management, and disaster mitigation in the Wider Caribbean specifically and in Small Island Developing States globally

"Climate change is expected to cause more severe and more frequent natural hazards. As our cities and coasts grow more vulnerable, these hazards can lead to disasters that are far worse than those we have seen to date. We have a moral, social and economic obligation to build resilience by 2015. Implementing the Hyogo Framework for Action will also help us reach the Millennium Development Goals."

Ban Ki-moon, Secretary-General of the United Nations, 2007

SPECIAL CONCERNS

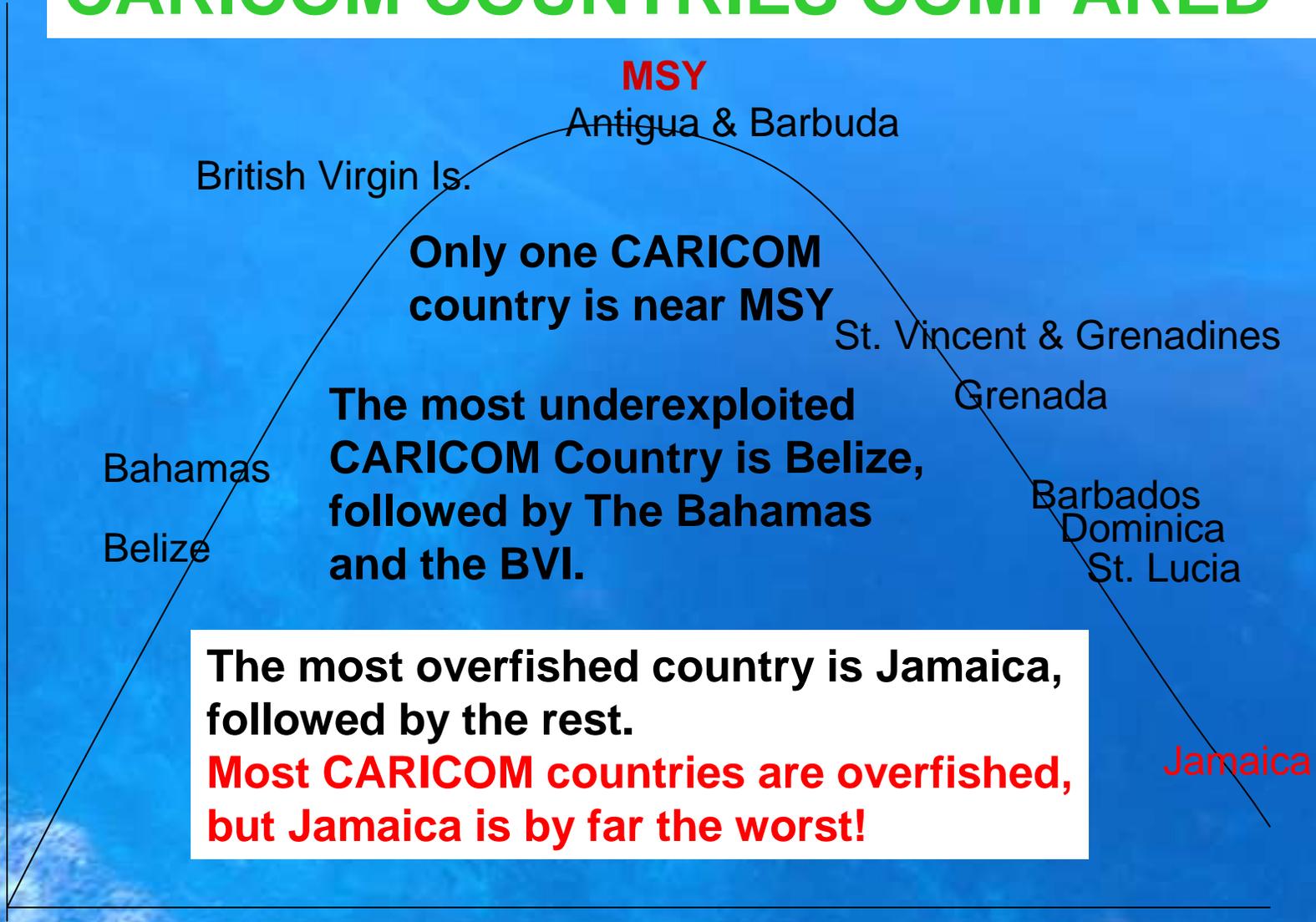
- **Major investments eg Hotel Plant / Energy / Utilities / Health Facilities / Infrastructure preferentially located in HIGHEST HAZARD ZONE**
 - on Coast (Coastal Inundation fr Hurricanes, Tsunamis)
 - On soils prone to LIQUEFACTION (Reclaimed Lands) and
 - Landsliding
- **Many structures (eg Hotels) are dangerously close to the shoreline and susceptible to WAVE Damage / COASTAL INUNDATION from both Storm Surge + Tsunami!**
- **The Removal / Damage to Natural Protective Systems eg Reefs, Wetlands has been a feature of Caribbean Development**

Lesson

- **New / Emerging Economically important sectors need to be better engaged in the Risk Reduction / Planning processes.**
- **The lessons from these sectors in Cayman / Bahamas / Grenada elsewhere in the Caribbean need to be compiled into a Best Practice Guide as soon as is possible.**
- **The implication for Jobs and the State Revenue impacts of Natural Disasters need to be analysed and responded to by Stakeholders in a more systematic way across the Region**

CARICOM COUNTRIES COMPARED

← Yield of Fish (and therefore Fishing Income \$)



Fishing Pressure (and therefore Cost of Production \$) →

"Capacity Development"

Complexity

National/Societal

Organization

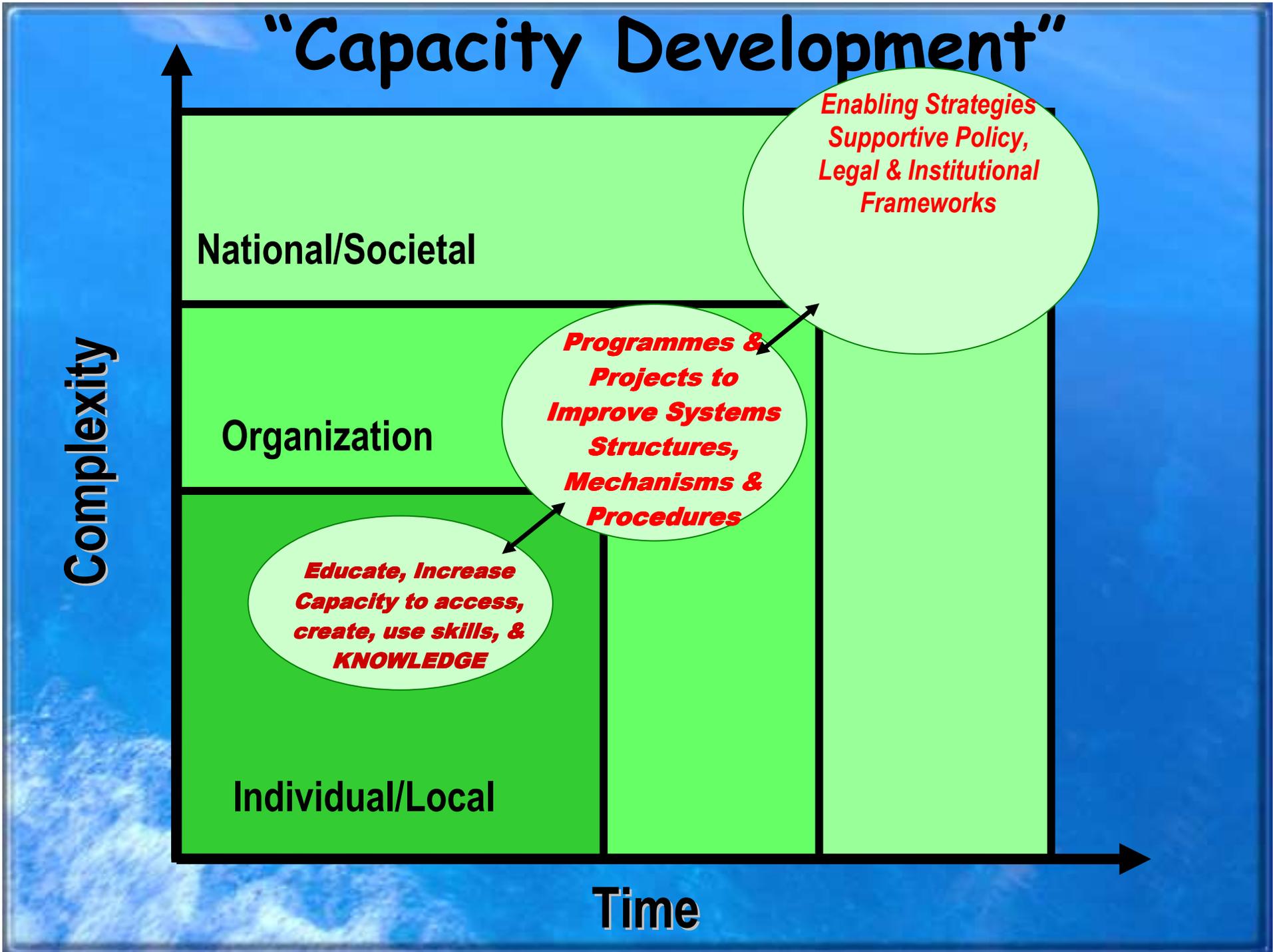
Individual/Local

*Enabling Strategies
Supportive Policy,
Legal & Institutional
Frameworks*

*Programmes &
Projects to
Improve Systems
Structures,
Mechanisms &
Procedures*

*Educate, Increase
Capacity to access,
create, use skills, &
KNOWLEDGE*

Time



Recent Activities / Diagnostics

- **WSSD, MDG, CSD, GIWA, GEO, GPA Processes**
- **BPOA Review and Mauritius Strategy**
- **ACS, CARSEA, LCME, IWCAM**
- **Convergent Sustainability Based Strategies**
 - **NSSD; IWCAM; Fisheries etc**
 - **Regional, National, Subnational**
 - **Municipal, Local Govt entities**
 - **Sectoral (Tourism, Agricultural, even Mining)**
- **CLIMATE CHANGE / MACC**
- **CDM, WCDR, ISDR, HYOGO Processes**

Ocean Governance

- **National Focal Points**
- **Delimitation challenges**
 - Between CARICOM members
 - Involving neighbours
- **New interest in exploiting Hydrocarbon and other marine resources**
- **Caribbean Sea as a Special Area**
- **Emergence / Strengthening of Caribbean Sea Commission**
- **LCME “Process” (GEF supported led by CERMES)**

Coastal and Marine Resources

Challenges and Issues

- **CAPACITY BUILDING** to meet many of the commitments under the BPoA / MS
- **IMPROVED COORDINATION** between / among the various agencies with responsibility for land, watershed coastal, marine and ocean management
- **RESOURCE MOBILISATION**
- **GAPS in Ocean Governance system**

Identified Priorities

- **Clearly articulated, vertically and horizontally integrated, comprehensive national policies on Coastal and Marine issues**
- **Integrated Watershed & Coastal Area management processes, policies and practices that explicitly address improving livelihoods of coastal communities**
- **Establishment & effective implementation of the regional agreements (such as LBS Protocol of the Cartagena Convention - Caribbean)**
- **Integrate the GPA / NPA Processes related to Land Based sources of Impacts at Ecosystem, Regional and National Levels**

“PARTNERSHIPS”

**VITAL FOR EFFECTIVE
INTEGRATED WATERSHED
/COASTAL AREA
MANAGEMENT**

**–IWCAM –
OF SIDS?**

**And also VITAL for OCEAN
GOVERNANCE**

Why Partnerships?

- PROVIDES INTEGRATED STRUCTURED FRAMEWORK FOR STRATEGIES, POLICIES & PROGRAMMES AS WELL AS PROJECTS, ACTIVITIES (AND EVENTS)
- “PACKAGES ” EXISTING/NEW INITIATIVES / CONVERGING ISSUES
- GENERATE INVESTMENTS, NEW FINANCING (PUBLIC/PRIVATE SECTOR)



THANK YOU!!

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UNEP-CAR/RCU Contact

UNEP-CAR/RCU

14-20 Port Royal Street

Kingston, Jamaica

Ph: (876)-922-9267

Fax: (876)-922-9292

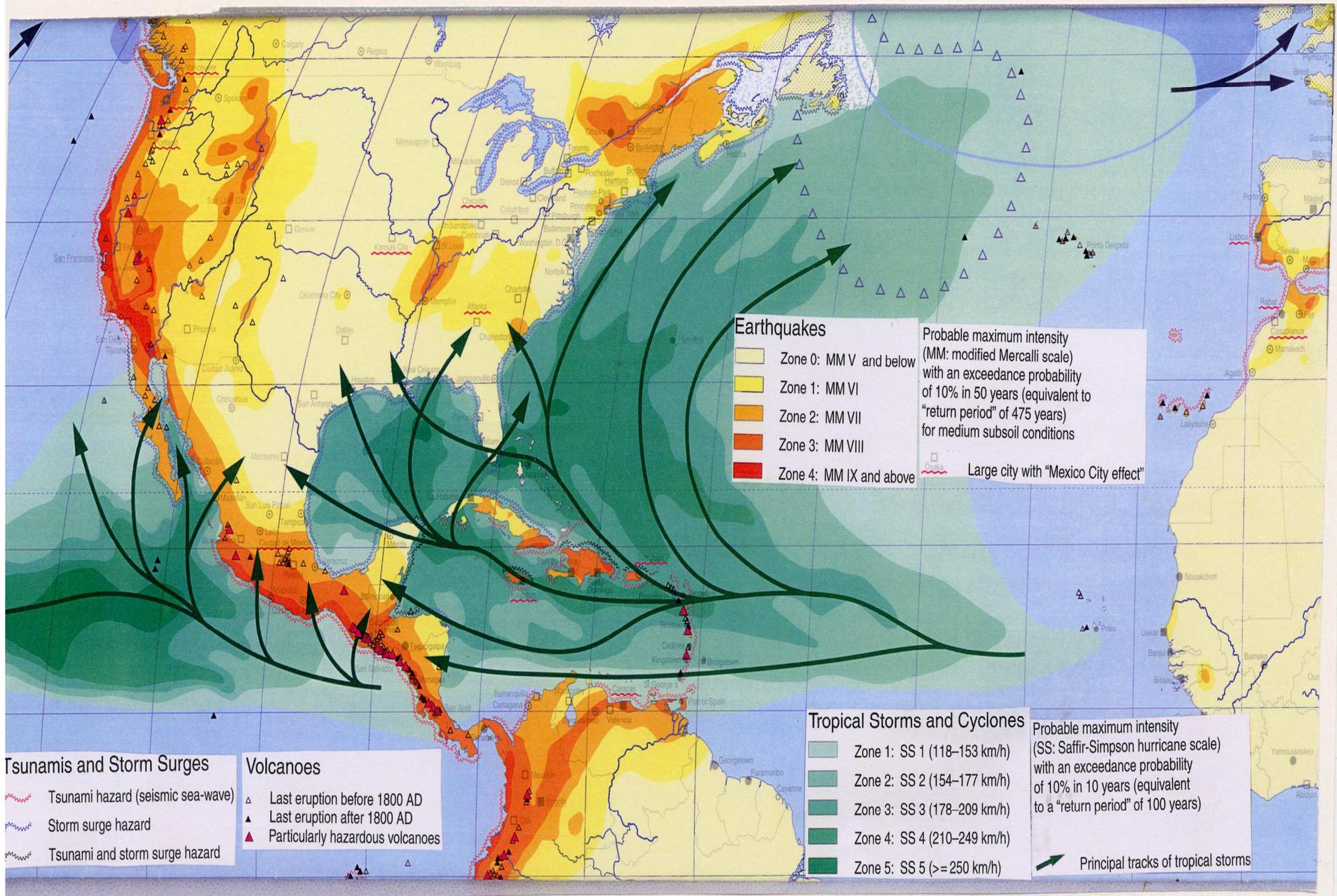
uneprcuja@cwjamaica.com

Website: www.cep.unep.org



Natural hazards in the Caribbean

From: Munich Re, 2002.



Effective coping systems

- ❑ Risk Sensitisation / Early Warning / Vulnerability Awareness / Capacity Building systems involves chains of actors / processes
- ❑ Narrow “technical” conceptions of such systems leave weak links in the chain – where failures occur (eg Warning System failures in Haiti/Grenada?2004, S AsiaTsunami 2004, TONGA 2006)
- ❑ “Mainstreamed” = ‘infused’ into education and culture as well as the business and livelihood related societal value systems.

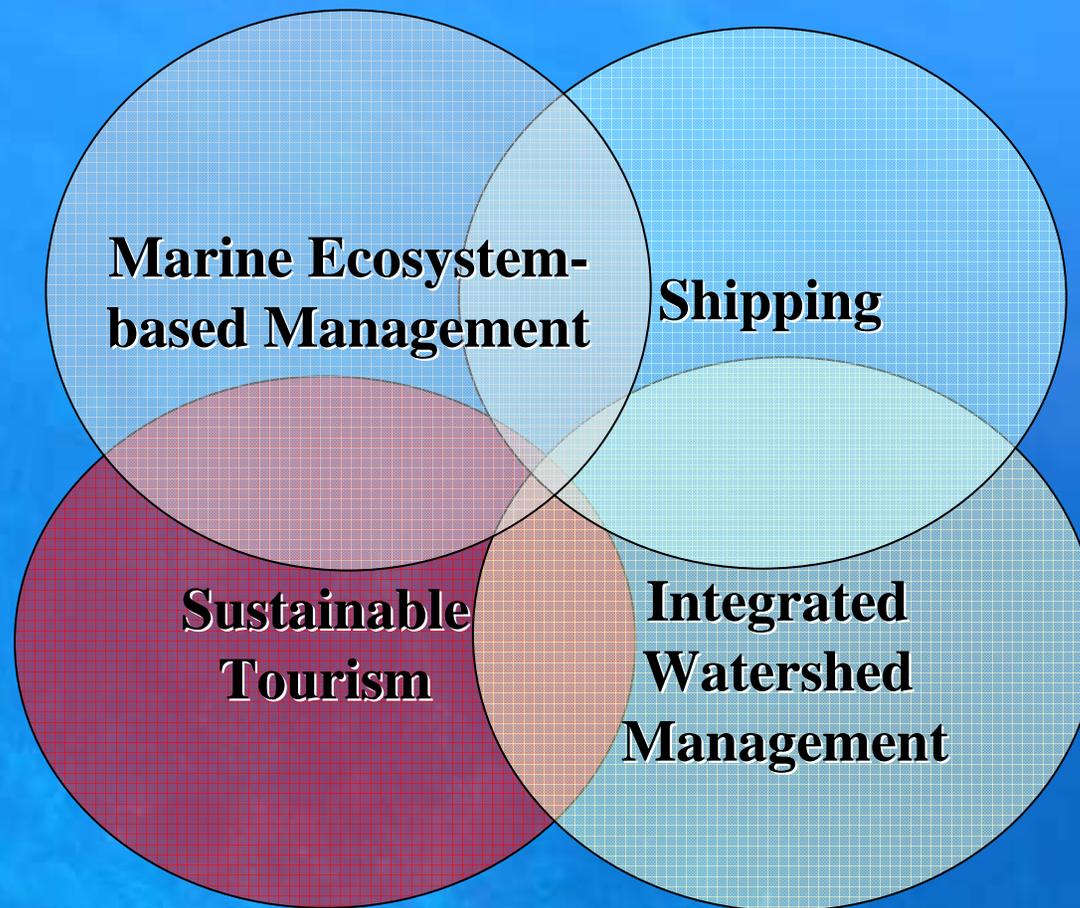
Shared Societal Knowledge of the risks faced by Communities = Risk ‘Culture’

‘Technical’ awareness =, zoning, safer built env; & monitoring + Alert / Warn’g Services

Wide Formal and Informal Diffusion/ Dissemination of Useable risk info products

Knowledge and capacity for timely action (pre, during, post) threat at appropriate levels

WW2BW Four Theme Areas



- Recognizes the overlapping natures of the topics
- Promotes new approaches of integrated management