



# Biodiversity and Climate Change in Islands

# Presentation Outline

- Relationship between CC and Biodiv on islands
  - CC as a key driver of biodiversity loss
  - Ecosystem based adaptation
- Addressing CC in national policies and strategies including NBSAPs
  - Examples of potential national level targets under Target 10

## CC as a key driver of biodiversity loss

- Especially vulnerable to the effects of climate change, sea-level rise and extreme events.
- Deterioration in coastal conditions (e.g. erosion of beaches and coral bleaching) is expected to **affect local resources e.g. fisheries, and reduce the value of these destinations for tourism.**
- Sea-level rise is expected to exacerbate inundation, storm surge, erosion and other coastal hazards, thus **threatening vital infrastructure, settlements and facilities.**
- Climate change is projected by mid-century **to reduce water resources** in many small islands to the point where they become insufficient to meet demand during low-rainfall periods.
- Increased **invasion** by non-native species is expected to occur with higher temperatures.



# Expected impacts of climate change in 2050



<http://maps.grida.no/go/graphic/expected-impacts-of-climate-change-in-2050>  
 Cartographer/designer/author credit Nieves López Izquierdo, Associate Consultant UNEP/GRID-Arendal

Sources: R. Landa et al., Cambio climático y desarrollo sustentable, 2010; ECLAC, Climate Change. A regional perspective, 2010.

# Economic impacts

- Potential **loss** for CARICOM countries estimated between **\$1.4 billion and \$9 billion**, assuming no adaptation measures.
- Biggest impacts: loss of land, housing, other buildings, and infrastructure due to sea-level rise. Impacts on agriculture are also potentially significant
- **Reduction in tourism, caused by rising temperatures and loss of beaches, coral reefs, and other ecosystems (15–20 percent),**
- Damage to property and life, caused by the increased intensity of hurricanes and tropical storms (7–11 percent).

## ***New SP: Target 10***

- By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

# Regional guidance

- Caribbean Community Climate Change Centre
- CANARI - Regional biodiversity and climate change assessment – (Macarthur)
  - predicted climate change trends and their impact on biodiversity in the islands of the Caribbean
  - identify gaps in regional knowledge and develop a research agenda to address these gaps and to identify capacity needs.



# Ecosystem based adaptation (EBA)

Sustainably managing, conserving and restoring ecosystems so that they continue to provide the services that allow people to adapt to climate change (IUCN)

- Current request for case studies of EBA on islands for Durban



# POWIB Guidance

- **Target 7.1: Resilience of the components of biodiversity to adapt to climate change in islands maintained and enhanced**

Suggested actions relevant for islands:

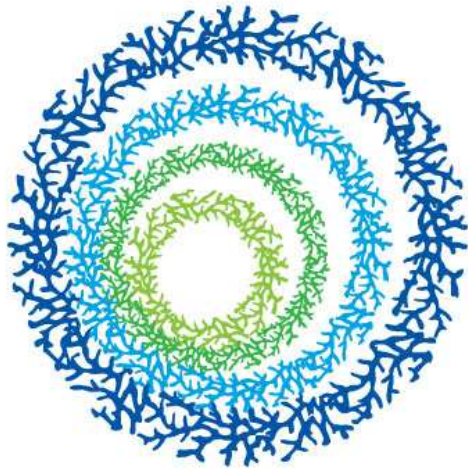
Research and implement adaptation and mitigation measures in land-use and coastal zone planning and strategies to strengthen local-level biodiversity resilience to climate change

- 7.1.2. Create where feasible viable national systems of protected areas that are resilient to climate change

# POWIB Guidance

## **Resilience of the components of biodiversity to adapt to climate change in islands maintained and enhanced**

- Research and implement adaptation and mitigation measures in land-use and coastal zone planning and strategies to strengthen local-level biodiversity resilience to climate change
- Monitor the impacts of climate change on key species
- Consider afforestation and reforestation projects that enhance island biodiversity
- Develop models to understand the vulnerability of island biodiversity to climate change, including
  - Identify species (e.g., corals) that are resilient to climate change in order to use those species for restoration.
  - Reduce chemical and physical degradation of coral reefs to facilitate recovery from climate-induced bleaching.



| G L O B A L  
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P A R T N E R S H I P

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