

Community-based adaptation through ecosystem conservation

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Natural Coastal Protection and Cost-Benefit


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Coral reefs provide flood protection worth \$1.8 billion every year – it's time to protect them

May 7, 2019 7:22am EDT

Underwater view of waves breaking over a healthy coral reef, reducing wave energy at the shoreline that can cause flooding. Curt Storazzi, USGS

Miches, Dominican Republic



Drone Imagery and Digitized Structures

Switch to
builder mode

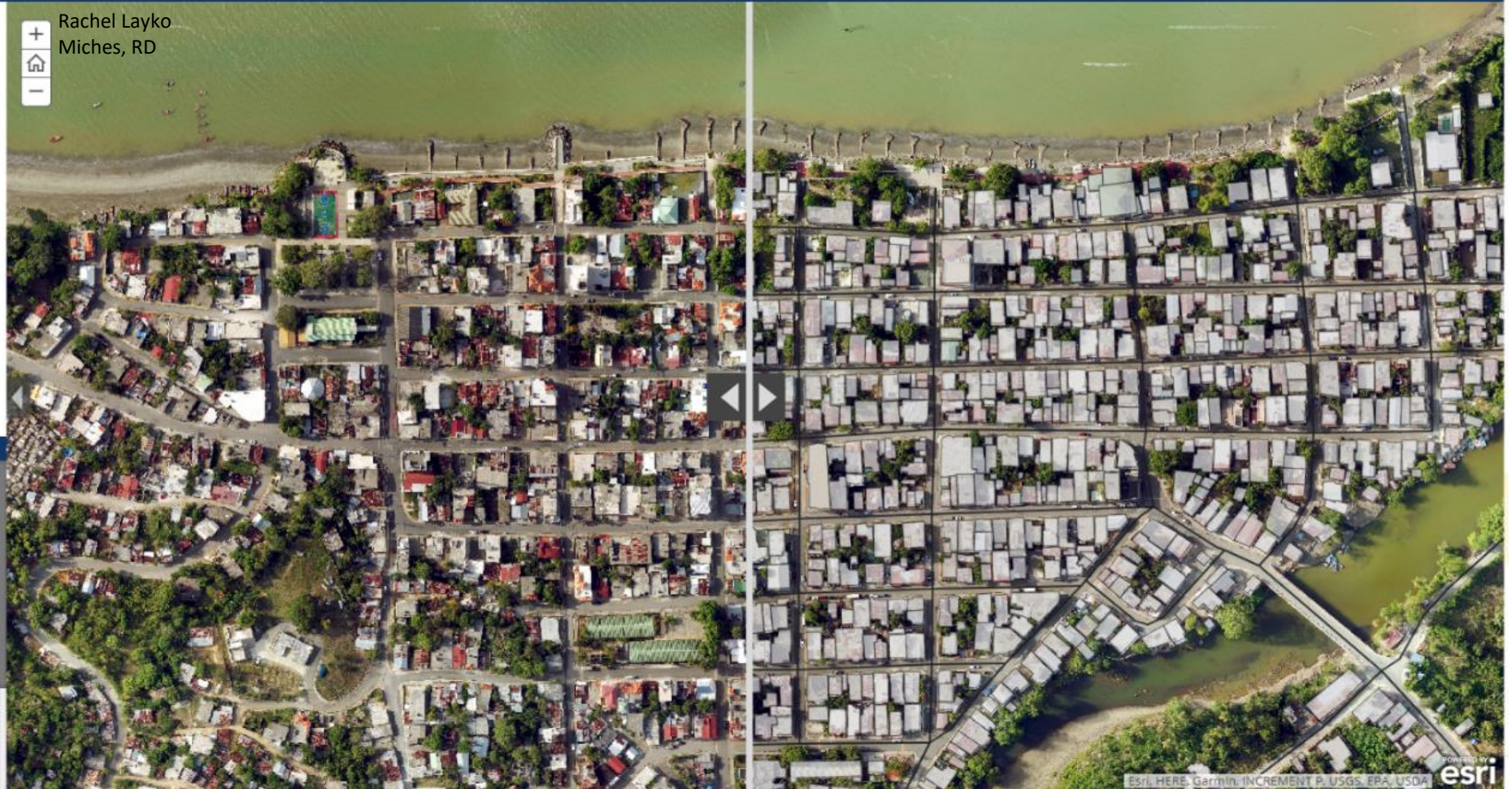
A Story Map   


This map shows the drone imagery and then
the structures that I digitized.

+
Rachel Layko
Miches, RD
-

Legend

MichesLayout	Structures
Miches All - July 31 and Aug 1_transparent_mosaic_group1.tif	
 Red: Band_1	
 Green: Band_2	
 Blue: Band_3	
Miches_DSM.tif	
 High : 57.8578	
 Low : -73.2115	
	Roads
	 Paved
	 Unpaved
	Ortho_Layout
	Miches All - July 31 and Aug 1_transparent_mosaic_group1.tif
	 Red: Band_1
	 Green: Band_2
	 Blue: Band_3



<https://cga-wm.maps.arcgis.com/apps/StorytellingSwipe/index.html?appid=90a5cf5a509b40e9a6e707de41d92999>

Details Add Edit Basemap

Save Measure Bookmarks Find address or place

My Content

Search for layers

13 layers

Miches Location Map

by rblayko_cgs

Updated: 11/28/18

Roads_Structures

by rblayko_cgs

Updated: 11/28/18

Ortho_Layout

by rblayko_cgs

Updated: 11/27/18

Points_RI_Locations

by rblayko_cgs

Updated: 11/27/18

DSM_Layout_Color

by rblayko_cgs

Updated: 11/27/18

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Roads_Structures

Feature Layer by rblayko_cgs

Updated: November 28, 2018

Map displaying roads and structures only.

Description

This map should be used to display how digitizing was accomplished.

Terms of Use

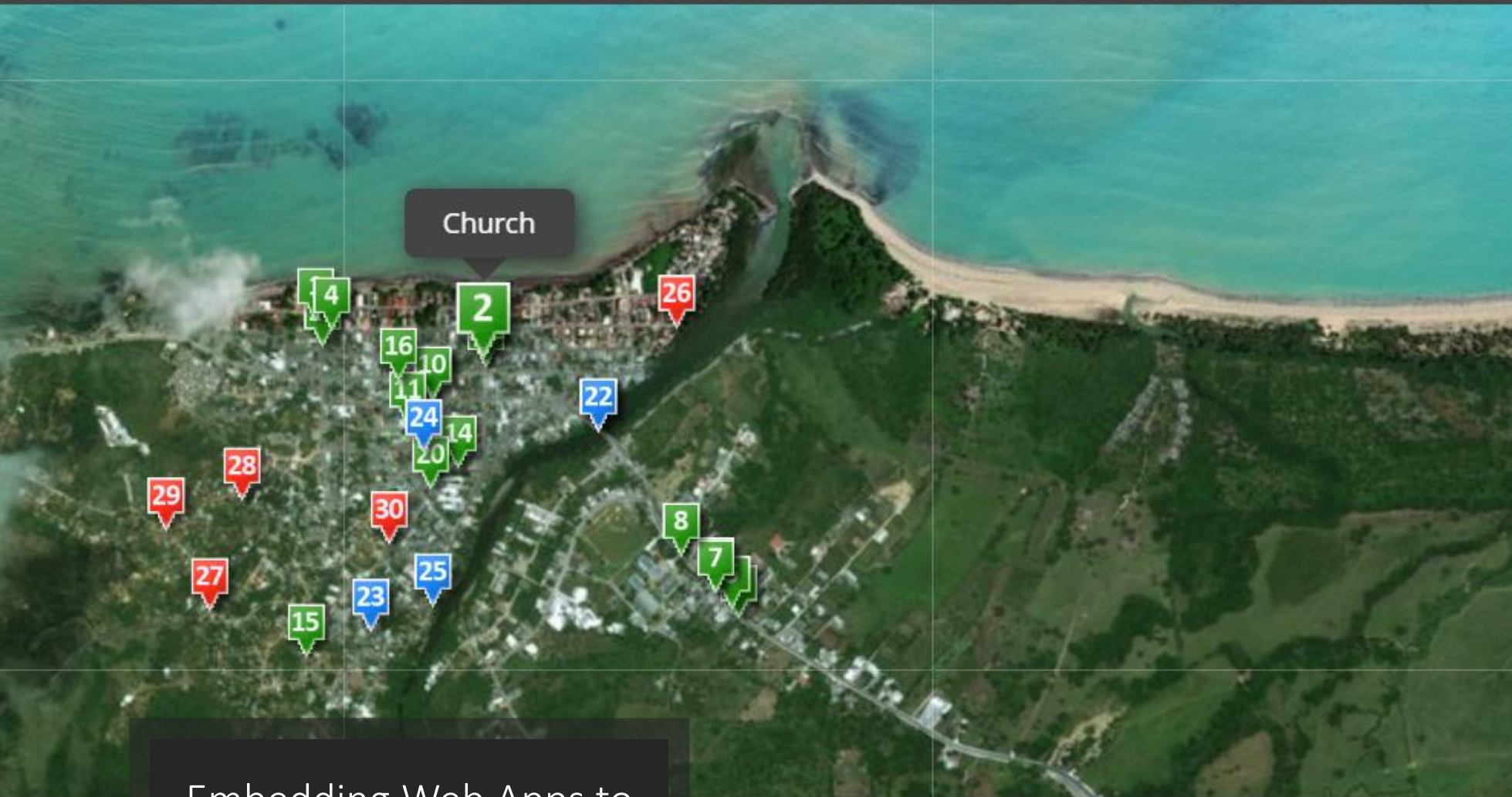
No special restrictions or limitations on using the item's content have been provided.

Remove from Map

Rachel Layko
Miches, RD

POWERED BY
esri

Source: HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA



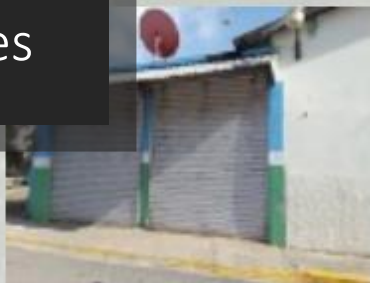
Embedding Web Apps to
identify key structures



Church



Bus Station



Bus Station



Police Station

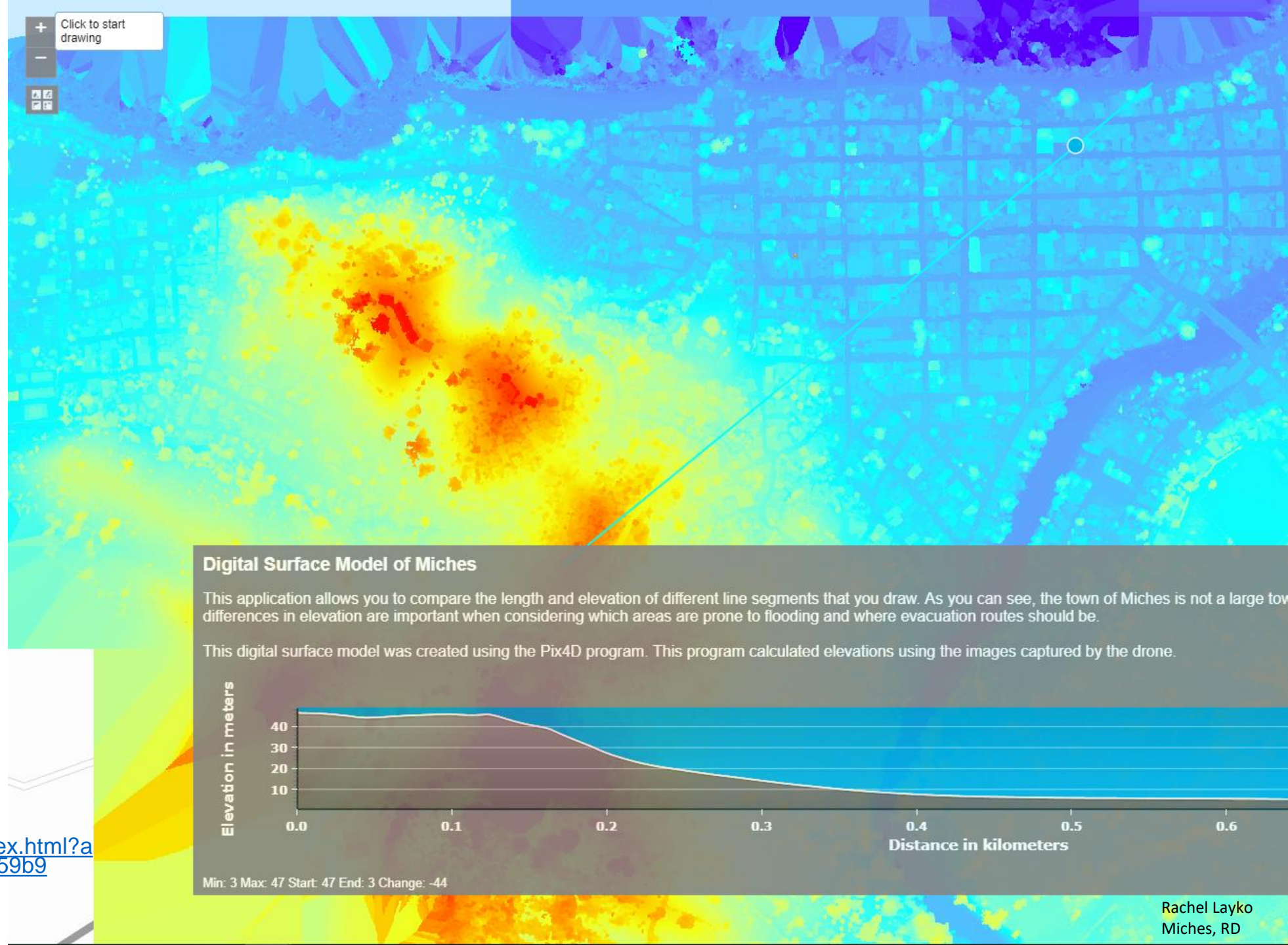


Water Facility



High School

Digital Surface Model



<http://cga-wm.maps.arcgis.com/apps/Profile/index.html?appid=260442a1fdb64fba843ea3fbf7459b9>



ROAD MAP TO COMMUNITY RESILIENCE

Stage 2

Understand community risk and resilience



Stage 3

Taking action for resilience



Stage 4

Learning for resilience



Enhanced community resilience

Working on resilience

Grenada –hybrid RE-ENGINEERED REEF

- Pilot Submerged Structures-GBA:
- Issues:
 - Severe Coastal Erosion
 - Loss of Reef Crest
- Solutions:
 - Re-engineered reef (increase reef crest, reduce wave energy)
 - Mangrove restoration
- Implementation:
 - Fishers



Barbados Debt Conversion

What is a debt for nature swap?

- **Emerged during Latin American debt crisis of the 1980s**
 - US cancelled \$875 million of debt to 7 LA countries
- **Two types:**
 - Commercial or Private: involving debt owed to banks
 - Bi-lateral: involving debt owed to governments

Seychelles Debt Swap & Commitments



Deal summary

- Create a permanent funding source for local conservation & adaptation to climate change through **\$22 M of sovereign debt restructuring**, via the Paris Club
- Blend grants & impact capital to purchase & restructure foreign debt into a domestic obligation to invest in conservation & adaptation.
- Deal results in upwards of \$8 M to fund activities (over 20 years) and \$6.6 M endowment capitalized for conservation

Government's Conservation/Policy Commitments

- 30% of waters in protected areas (400,000 Sq. Km)
- 15% of waters in no take fish replenishment zones (200,000 Sq. Km)
- Adopt recently completed Marine Spatial Plan to guide updating of Coastal zone management/fisheries/marine policies

Activities funded by the Transaction

1. Management of new marine protected areas and fish replenishment no-take zones
2. Coral and mangrove restoration projects
3. Improve marine, fisheries and coastal zone policy and regulatory protection regime
4. Investment for economic diversification (sustainable fisheries and sustainable tourism)
5. Social resiliency to climate change in coastal communities
6. Implementation of MSP
7. Development of Disaster Risk Reduction Plan

Benefits to Government

- **Redirection of external debt service** for investments in country: **upwards of US\$46 M** (over 20 years)
 - With two thirds of this payable in local currency
- **Debt Relief of \$66.4 M** on interest not paid (post restructuring)
- **Reduce interest rate** of debt 6.4% (avg.)
- **USD\$8.1 M Catastrophic Hurricane coverage**
- Government entities eligible to apply for funding from Trust entity

Lessons Learned

- Patience
- Scale matters
- Ministry of Finance key
- High Level commitments helpful
- Concept very well received by SIDS, public and private donors, impact investors, etc.
- Possible to raise loan capital directly from private markets
- Possible to de-risk deal for sovereign an catastrophic risk
- Broad stakeholder consensus necessary



THANK YOU

Steve Schill/TNC
Los Haitises, RD