RYLA 2021

ENVIRONMENTAL SUSTAINABILITY

JANUARY 16, 2021

AGENDA

WELCOME & INTRODUCTION Matthew Render (Saint Lucia)

THE PROBLEMS Matthew Render (Saint Lucia)

SOLUTIONS Keiron Nanan (Trinidad & Tobago)

COMPETITION LAUNCH Darren Sarijoen (Suriname)


The Problems


Rising Sea Levels

Sea Level Rise: At A Glance

Increased temperature → Ice cap melt → Sea level rise

Current rate = 2070's worst-case scenario

55 billion tonnes of ice lost in 5 days…

…Enough to cover the whole of Florida in 5" of water

Current projections are for a rise of 1-2 metres by 2100

Implications for CARICOM

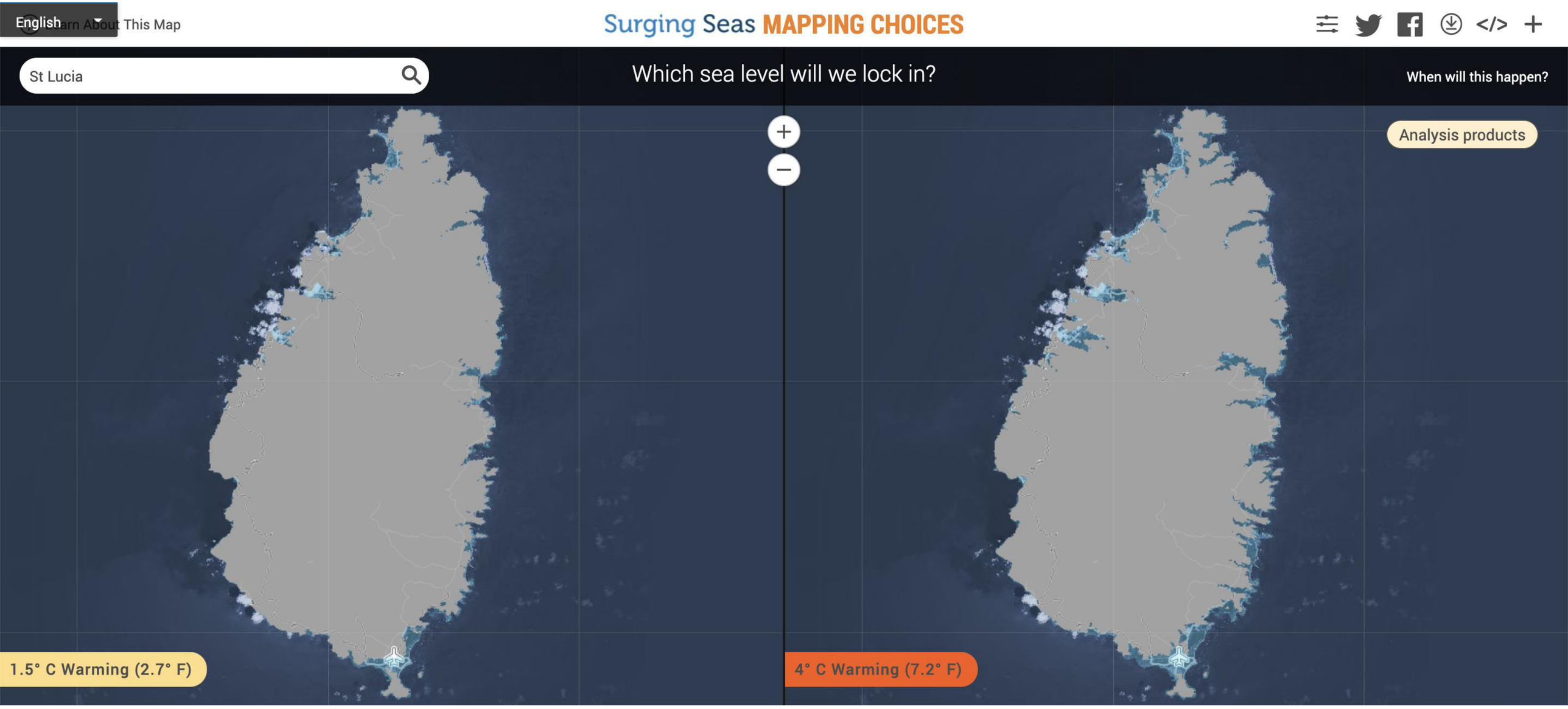
1 metre rise in sea level:

- 1,300 km^2 of land area lost
- 110,000+ people displaced
- 149 resorts damaged
- Loss of, or damage to, 5 power plants
- Loss of 567 km of roads
- Loss of, or damage to, 21 airports
- Land surrounding 35 ports under water

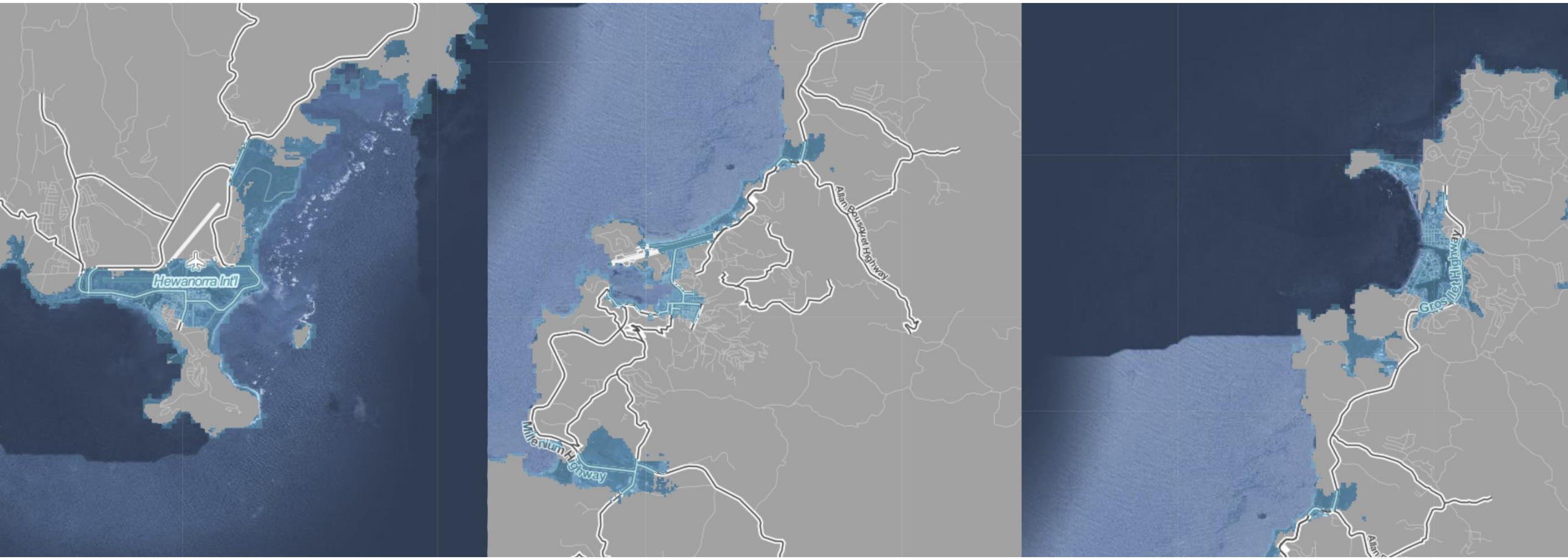
2 metre rise in sea level:

- 3,000 km^2 of land area lost
- 260,000+ people displaced
- 233 resorts damaged
- Loss of, or damage to, 9 power plants
- Loss of 710 km of roads
- Loss of, or damage to, 31 airports
- Land surrounding 35 ports under water
- 40% of turtle nesting beaches under water

Sea Level Rise Mapping



Sea Level Rise Mapping



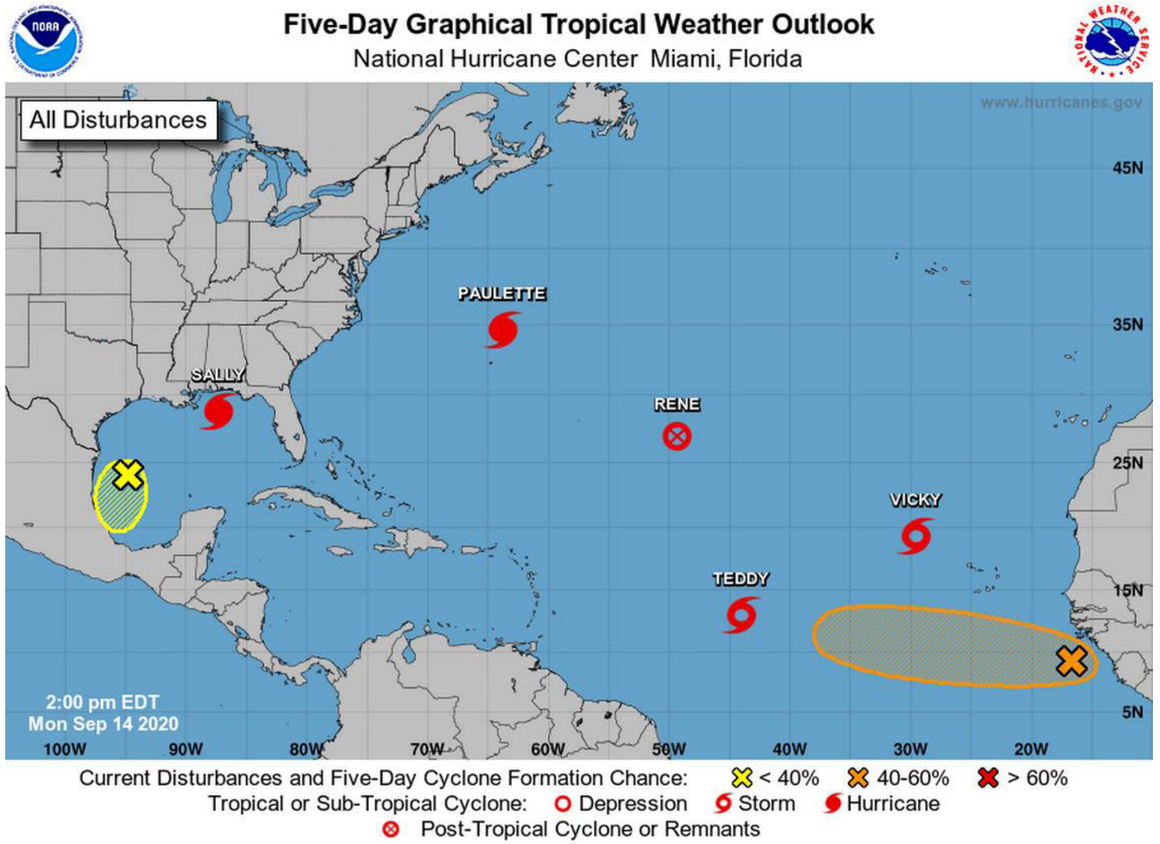
https://sealevel.climatecentral.org/

Extreme Weather

Extreme Weather: At A Glance

Rising temperatures → Changes in weather patterns:

- **Flooding**
- **Droughts**
- **Heatwaves**
- **Frequency/intensity of storms**



Extreme Weather: The Numbers

Floods and extreme rainfall events occur 4x more often than 1980

Floods and storms account for 72% of all climate-related disasters

Storms account for 50% of economic losses from disasters

Economic loss 7.5 x more likely to impact low income communities

Loss of life from climate-related disasters 4 x more likely

Extreme Weather: Economic Costs

Rebuild / relocation costs for ports between 1% and 6% of GDP

Rebuilding resorts from US$10bn to US$23bn

	Percentage of Current GDP			
Country	**2025**	**2050**	**2075**	**2100**
Anguilla	10.4	20.7	31.1	41.4
Antigua & Barbuda	12.2	25.8	41.0	58.4
Aruba	5.0	10.1	15.1	20.1
Bahamas	6.6	13.9	22.2	31.7
Barbados	6.9	13.9	20.8	27.7
British Virgin Islands	4.5	9.0	13.5	18.1
Cayman Islands	8.8	20.1	34.7	53.4
Cuba	6.1	12.5	19.4	26.8
Dominica	16.3	34.3	54.4	77.3
Dominican Republic	9.7	19.6	29.8	40.3
Grenada	21.3	46.2	75.8	111.5
Guadeloupe	2.3	4.6	7.0	9.5
Haiti	30.5	61.2	92.1	123.2
Jamaica	13.9	27.9	42.3	56.9
Martinique	1.9	3.8	5.9	8.1
Montserrat	10.2	21.7	34.6	49.5
Netherlands Antilles	7.7	16.1	25.5	36.0
Puerto Rico	1.4	2.8	4.4	6.0
Saint Kitts & Nevis	16.0	35.5	59.5	89.3
Saint Lucia	12.1	24.3	36.6	49.1
Saint Vincent & the Grenadines	11.8	23.6	35.4	47.2
Trinidad & Tobago	4.0	8.0	12.0	16.0
Turks & Caicos	19.0	37.9	56.9	75.9
U.S. Virgin Islands	6.7	14.2	22.6	32.4
Total Caribbean	**5.0%**	**10.3%**	**15.9%**	**21.7%**

Biodiversity

Biodiversity: At A Glance

Rising temperatures + Exploitation + Habitat

Degradation → Species migration / loss

- **Risk of losing 50% of species by 2050**
- **Marine vertebrate populations down by 50%**
- **Proliferation of invasive species**
- **Pole-bound migration**

Biodiversity: Species Loss

Turtle gender determined by temperature – decrease in males relative to females could cause population collapse / extinction

Decline in pollinators such as bees could impact 35% of crop species worldwide

Increasing temperature are driving species to higher elevations and toward the poles

Biodiversity: Species Migration

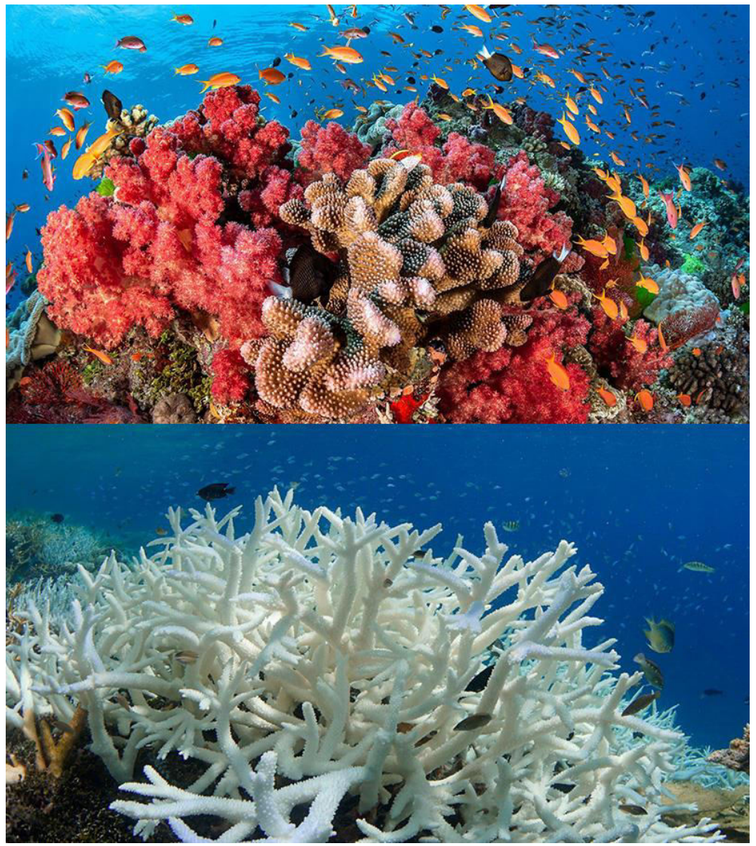
Changes in weather → Sargassum proliferation

- **Covers beaches, releasing gas / attracting flies**
- **Deters tourists**
- **Causes respiratory problems**
- **Damages marine ecosystems**
- **Disrupts recreation and fishing**

Biodiversity: Ocean Acidification

Change in temperature + Atmospheric CO_2 → Ocean Acidification

- **Contributes to coral bleaching**
- **Reduces size of marine life**
- **Restricts species development**
- **Up to 80% reduction in coral reefs**



Biodiversity: Coastal Protection

Rising Sea Levels + Storm Intensity → Coastal Erosion/Biodiversity Loss

Mangroves:

- **Provide a habitat above/below water**
- **Protect coastlines**
- **Maintain water quality**
- **Sequester carbon**

Health

Health: At A Glance

Myriad impacts disproportionately threaten low-income communities.

- **Extreme heat: muscle pain; exhaustion; cardiovascular issues**
- **Air pollution: respiratory issues; aggravated allergies**
- **Disease transmission: vector-borne; water-borne**
- **Mental health**


Economic Capacity

Economic Capacity: At A Glance

All of these problems disproportionately affect low-income communities.

SIDS also face myriad additional challenges:

- **Fiscal deficits, changing banking sector**
- **Low and volatile commodity prices**
- **Reliance on fossil fuels**
- **Over-reliance on tourism**

WHAT ARE WE DOING?

WHAT CAN YOU DO?

REFRIGERANT

Collection & Destruction

Participant Organisations:

Rotary District 7030 (Southern Caribbean)

Rotary District 7020 (Northern Caribbean)

Environmental Sustainability Rotary Action Group (Global reach and mandate)

Tradewater International (Chicago)

Country-level National Ozone Officers and representatives of ASHRAE (Caricom)

Tradewater is a mission-based environmental project development company headquartered in Chicago.

We collect, manage, and destroy greenhouse gases and create economic opportunity.

We do this all over the world.

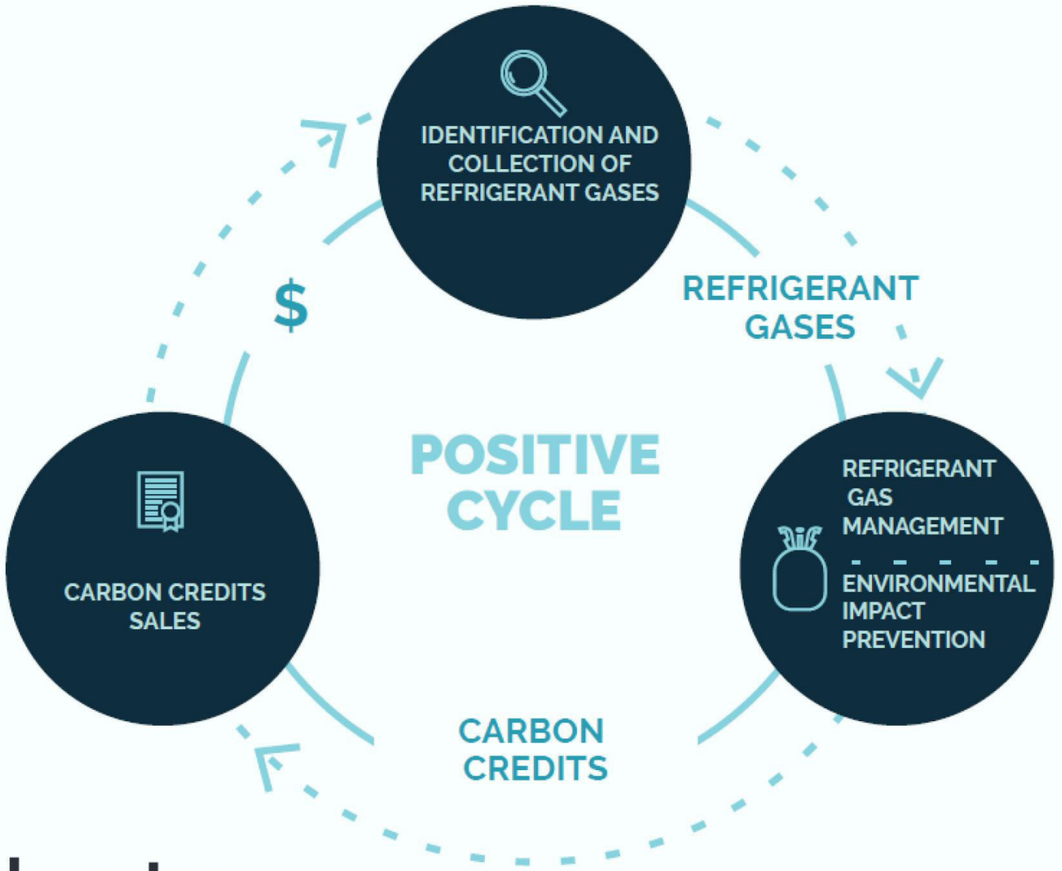
REFRICAZADORES | Tradewater

Tradewater’s projects have destroyed more than 430,000 kilograms of CFCs representing over 4 million tons of CO2e.

We have built networks for community engagement and project development on three continents.

Tradewater

How Do We Do This?



We identify, collect and manage refrigerant gases properly.

Once a sufficient amount has been accumulated, through an authorized waste manager, the gases are **destroyed or reclaimed** locally or internationally, preventing a potential negative environmental impact.

Carbon credits are generated through recognized and verifiable international protocols, and their sale finances the search and management of more refrigerant.

Tradewater

How Can You Participate?

Refrigerant search

- Government
- Private sector
- Academia
- Individuals

Communication and difussion

- Spread the word
- Share our material

Strategic alliances

- Associations /Chambers
- Government
- Waste managers and transport
- Other initiatives?
- Legal consultancy*

Tradewater

RECYCLING

Blue Waters School Project

RENEWABLE

Ice Production

GREEN SPACE

Chaguanas, Trinidad

Questions

More details

Who?

How?

Why?

What?

Eco-friendly Projects For You

Questions

More details

Who?

How?

Why?

What?

01

02

Which country/club is the cleanest and the greenest in D7030?

01 Tree-Planting Competition

02 Beach Clean-Up Competition

Questions

More details

Who?

How?

Rotary Supports The Environment

- ✓ Contributes to well-being of society and economy
- ✓ Reduces soil erosion
- ✓ Maintains oxygen flow, water cycles and clean air

- ✓ Highlights magnitude of waste problem
- ✓ Inspires us to demand better waste management
- ✓ Brings people together for safer and more attractive public space

Why?

What?

Questions

More details

Who?

- ✓ Organize tree-planting project
- ✓ Count trees planted
- ✓ Report to district
- ✓ WIN the competition
- ✓ Become greenest club in District 7030

- ✓ Organize clean-up project
- ✓ Record total mass
- ✓ Report to Clean-Up app
- ✓ WIN the competition
- ✓ Become cleanest country in District 7030

How?

Why?

What?

Rotary

Rotaract

Interact

Clubs are encouraged to collaborate with each other, other organizations and invite family and friends

Questions

More details

Who?

How?

Why?

What?

More details will be sent soon ...

Questions at the end of this session