



JUST TRANSITION IN THE CARIBBEAN

ITCILO Bureau for Employers Activities

An aerial photograph of a coastal area, showing a mix of land and water. The land features some vegetation and what appears to be a small settlement or farmstead. The water is a deep blue, and there are some lighter patches that could be sandbars or shallow areas. A semi-transparent blue horizontal band is overlaid across the middle of the image, serving as a background for the text.

What type of business-environment
we need for a
Just Transition to a Sustainable Economy?

2.1 Access to information

- There is currently an asymmetry of access to information between **large and smaller companies**.
- While **7 out of 10 large companies already have strategies to neutralize their emissions** (net-zero), this topic is still not common in the agenda of MSMEs.



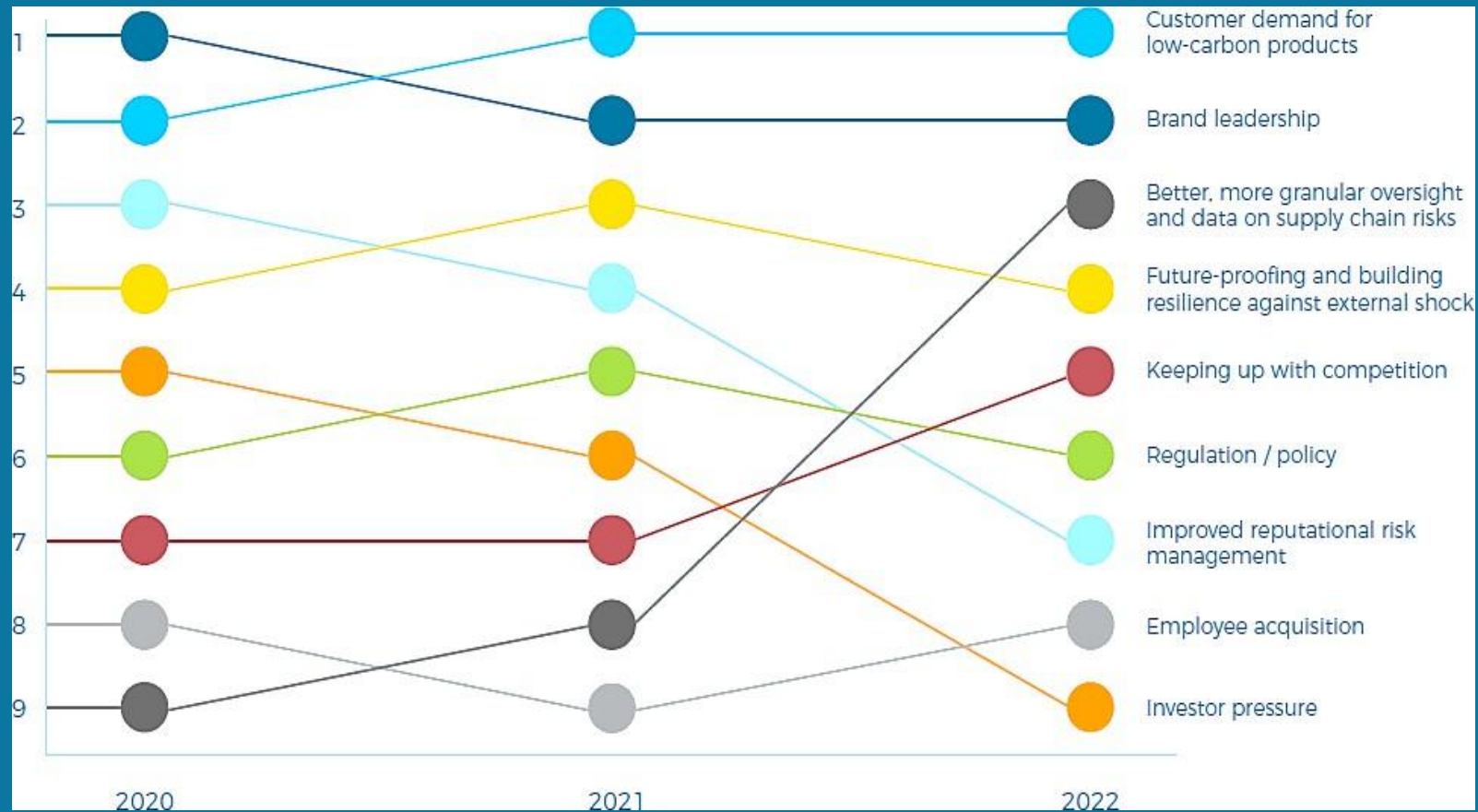
2.1 Access to information

MSMEs can benefit from the transition:

Environmental Area	Cost-Saving Impact for an MSME
Process Efficiency	Minimizes the MSME's spending on raw materials, energy, and water.
Product Design	Reduces the resources contained in each product, lowering unit costs.
Waste Management	Often, it is possible to reuse waste or transfer it to other companies, thus avoiding disposal costs.
Source of Raw Materials	Switching to recycled materials can reduce costs while maintaining quality. If properly communicated to consumers, product demand may also increase.
Infrastructure	MSMEs could reduce their energy bills by installing efficient lighting or insulating buildings.
Packaging and Transportation	Reducing packaging volume and finding local suppliers can minimize unit costs of transportation.

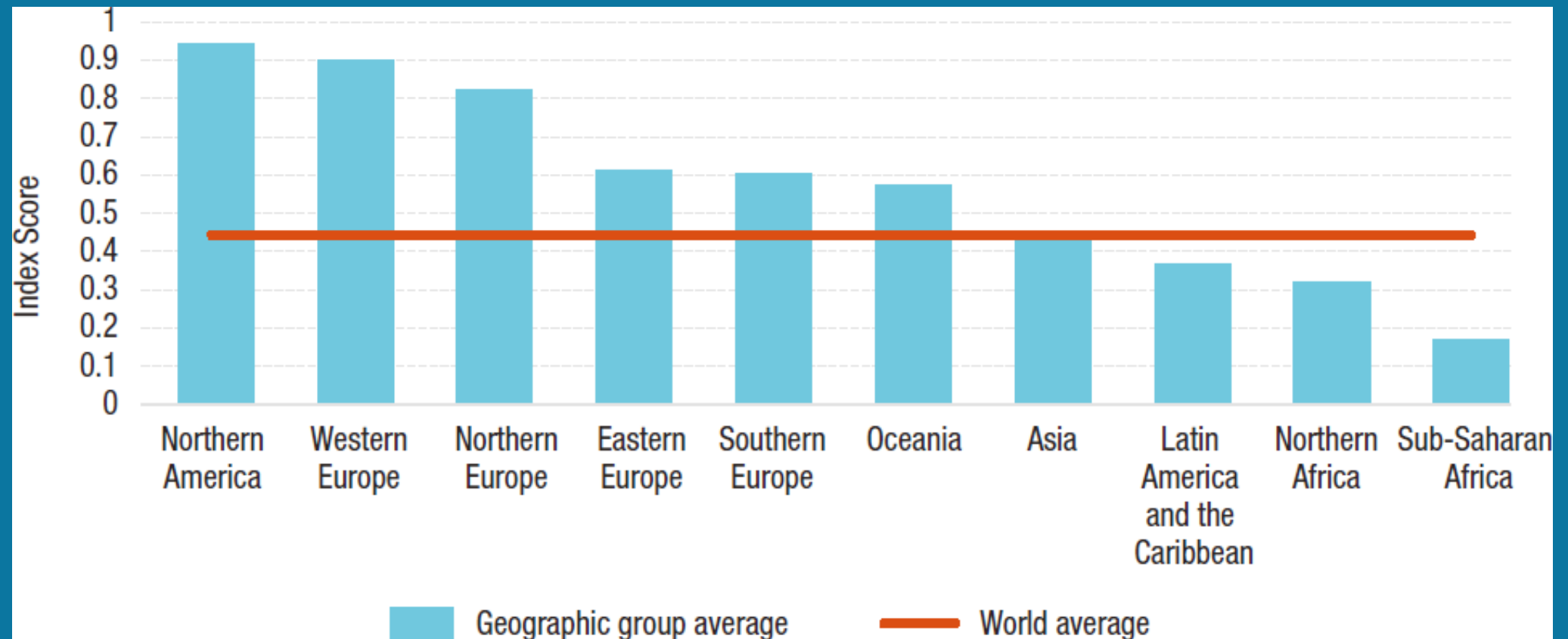
2.2 Sufficient demand for sustainable products/services

- South Pole Global Survey 2020, 2021 and 2022:
What motivates companies to invest in neutralizing their emissions?



2.3 Access to Technologies

There is a significant gap between the global South and developed countries.
Africa and LACare at the bottom of the list in terms of their capacity to adopt technological developments.

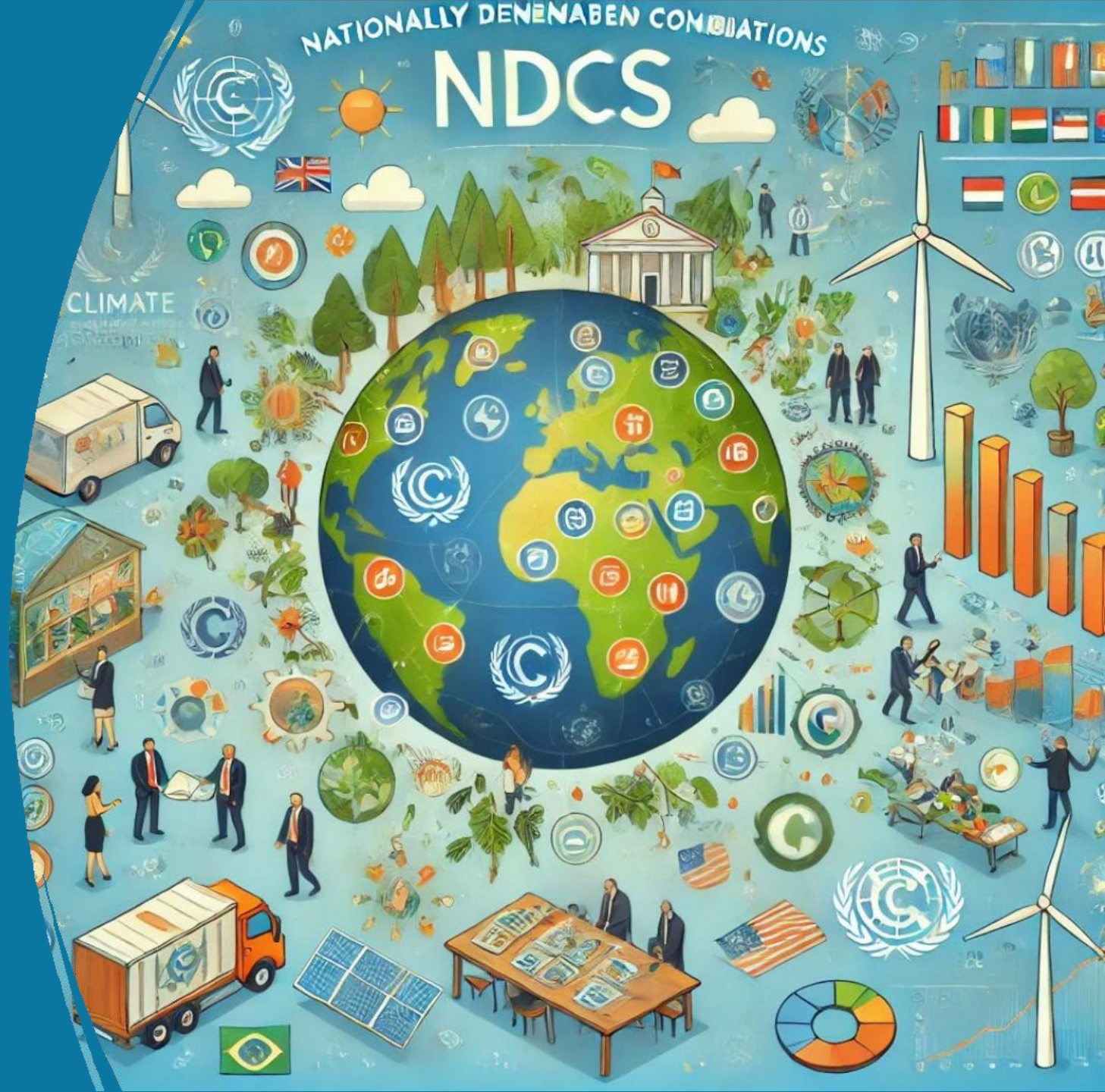


2.4 Physical and digital infrastructure



2.5 Regulations and policies appropriate to country context

- Each country has NDCs to reduce its emissions and impact on climate change, in accordance with the Paris Agreement.
- This is achieved through policies such as: **carbon taxes, fuel taxes, green subsidies, energy efficiency regulations**, etc.



2.6 Skills development

- In Scotland, the Government implemented a Skills Fund related to the Low Carbon Economy.
- This fund provides direct financial support to MSMEs (less than 100 employees) to cover 50% of training costs, in areas such as energy efficiency and waste management (OECD , 2018).





2.7 Access to financing

- The OECD estimates that the investment gap to implement the Sustainable Development Goals is around 70%.
- Smaller companies have the greatest barriers to accessing financing.

An aerial photograph of a coastal region, likely the Caribbean, showing a complex network of waterways, islands, and a large bay. The image is overlaid with a semi-transparent blue layer. Centered on this layer is the text "The case of the Caribbean:" in a white, serif font.

The case of the Caribbean:



Countries in this analysis are assigned to different ILO regional offices

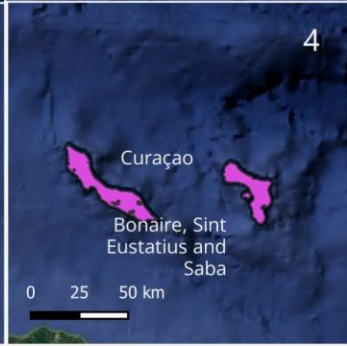
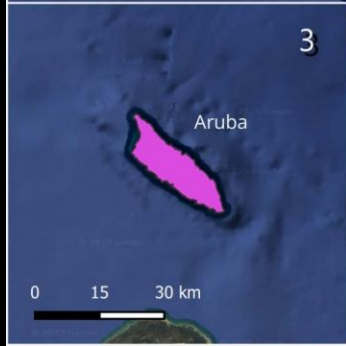
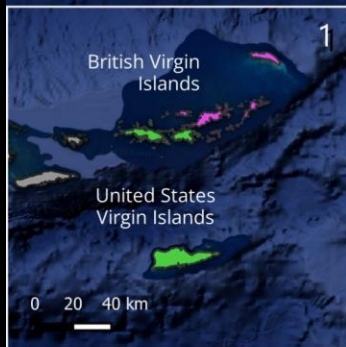
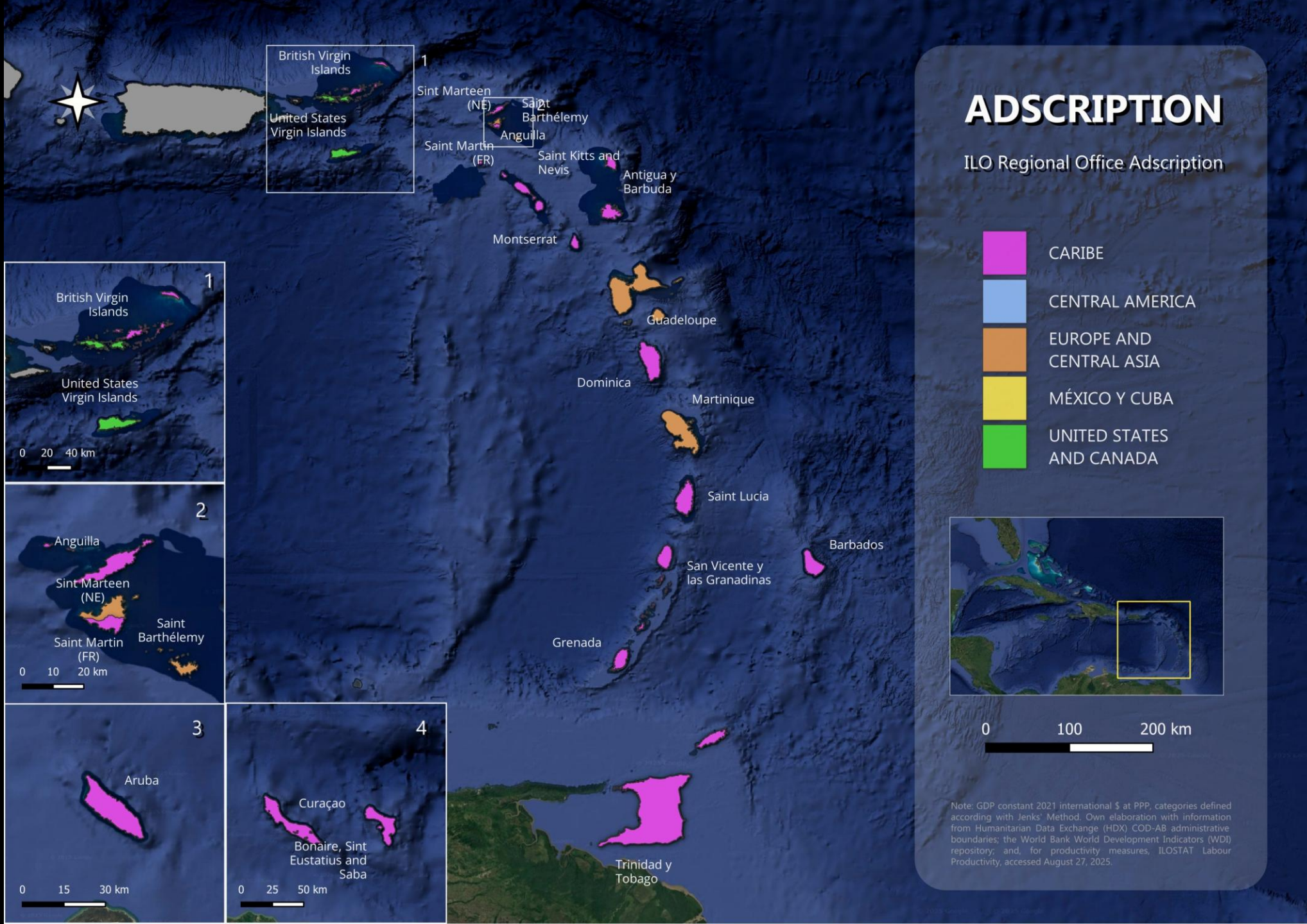
ADSCRIPTION

ILO Regional Office Adscription

	CARIBE
	CENTRAL AMERICA
	EUROPE AND CENTRAL ASIA
	MÉXICO Y CUBA
	UNITED STATES AND CANADA

0 250 500 km

Note: GDP constant 2021 international \$ at PPP, categories defined according with Jenks' Method. Own elaboration with information from Humanitarian Data Exchange (HDX) COD-AB administrative boundaries; the World Bank World Development Indicators (WDI) repository; and, for productivity measures, ILOSTAT Labour Productivity, accessed August 27, 2025.



ENVIRONMENTAL CHALLENGES

MITIGATION AND ADAPTATION

MITIGATION

- Actions needed to **reduce** or **prevent greenhouse-gas emissions** and enhance sinks, as defined by the UNFCCC.

ADAPTATION

- Actions needed towards **adjusting natural or human systems to climate risks** while safeguarding livelihoods and inclusion.
- **RESILIENCE AND RECOVERY**
- Capabilities to **withstand, absorb**, and quickly **restore** from **climate shocks** within equitable development pathways.

CYCLONES



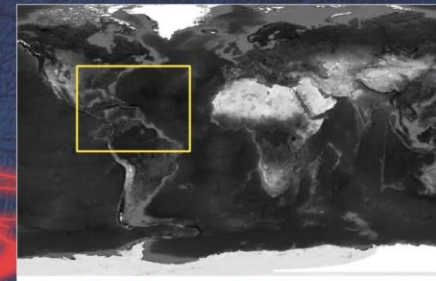
The **Caribbean**, together with Southeast Asia, is among the **regions of the world** most **exposed** to the threat of tropical **cyclones**.

In **recent years**, regional **vulnerability** has **increased** due to a rise in the **average temperature at sea level**, leading to more **catastrophic events**.

CYCLONE TRACKS

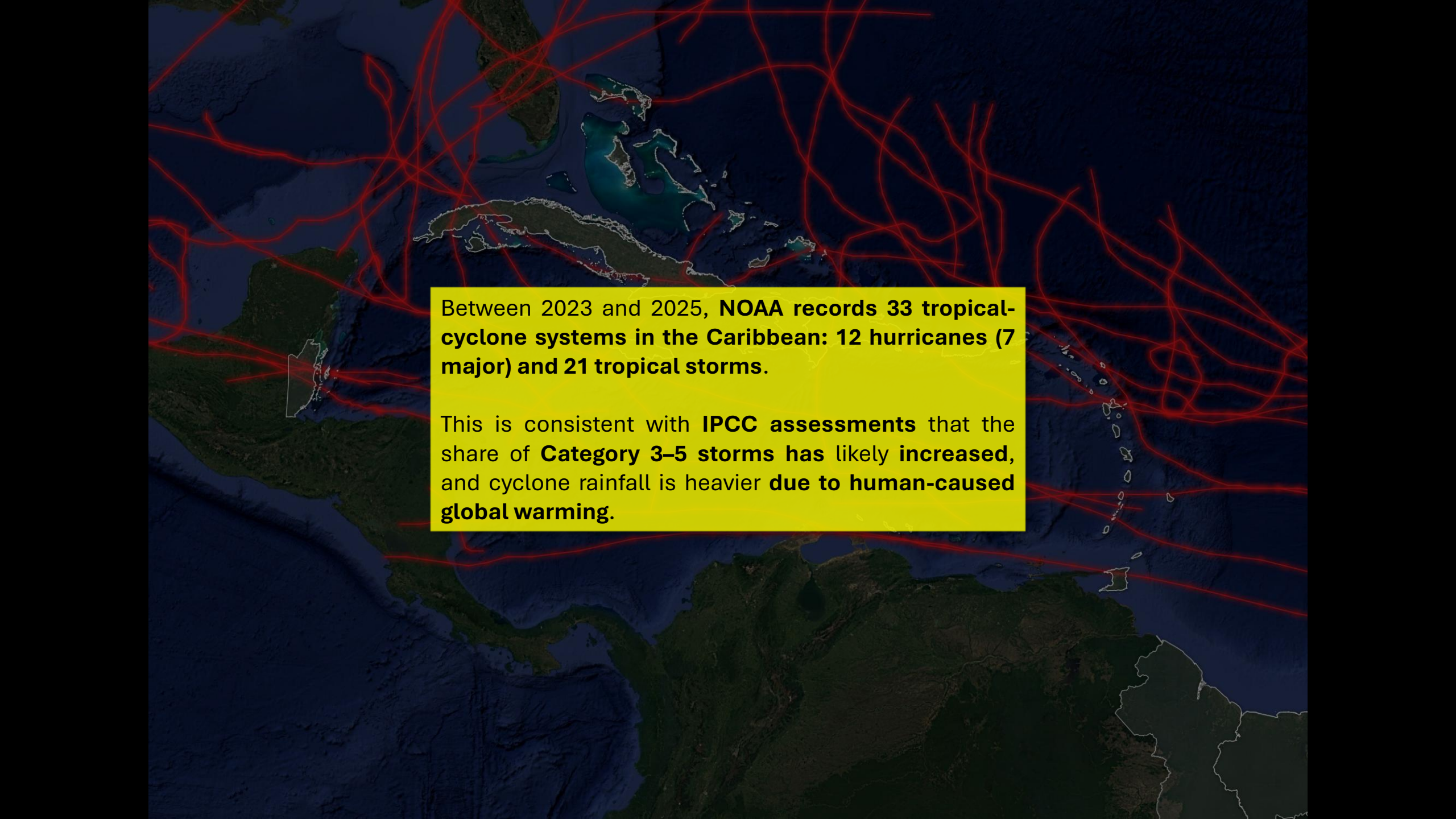
Hystorical Caraibbean
Cyclone Tracks
2023 - 2025

- Tracks
- Selected Countries



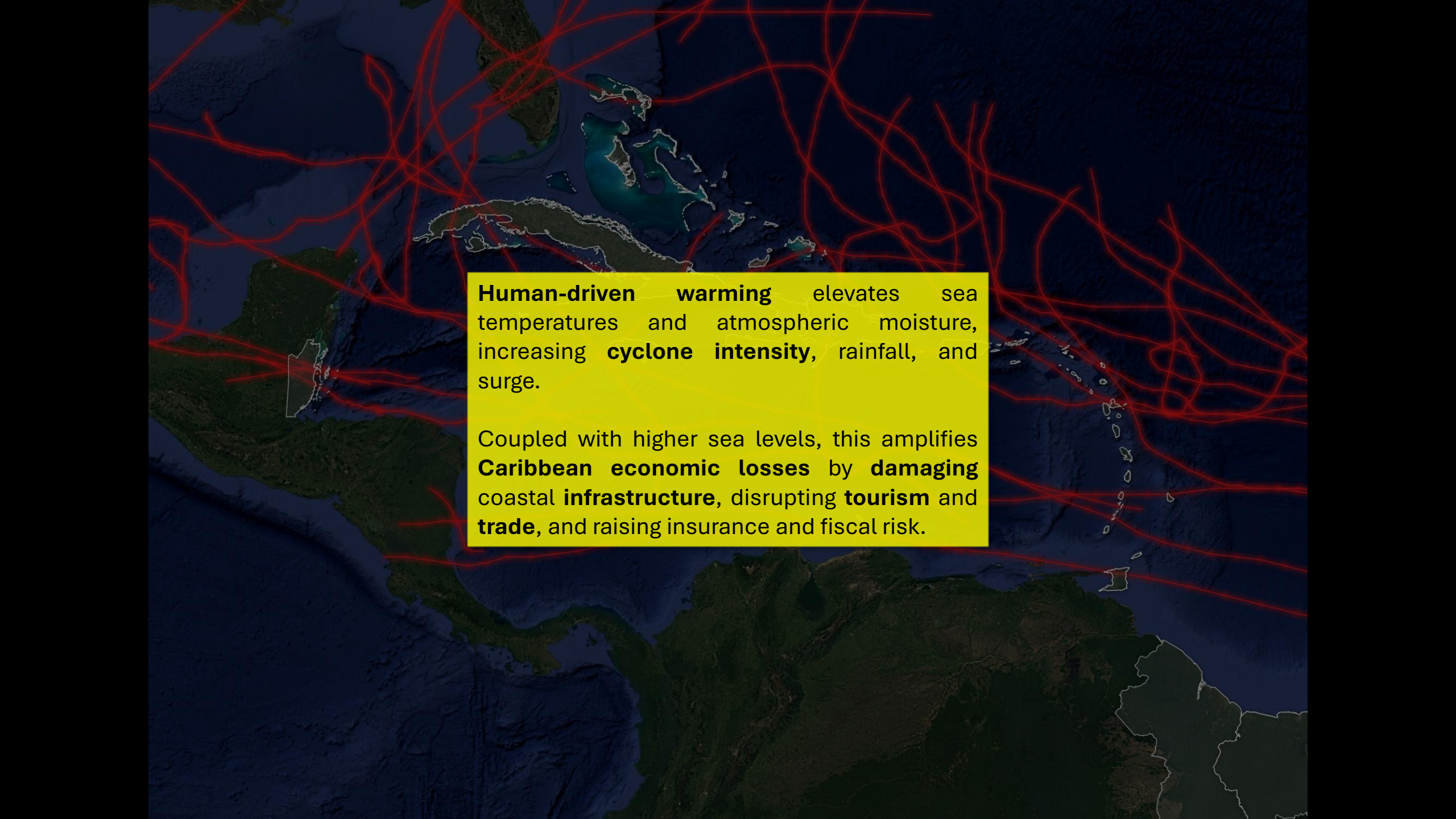
0 100 200 km

Note: Own elaboration with information from NOAA Office for Coastal Management, Historical Hurricane Tracks (interactive mapping tool). // Tracks represent best-track positions and paths for tropical and subtropical cyclones in the Caribbean, including hurricanes, tropical storms, and tropical depressions, and may include post-tropical or extratropical phases as reported by the originating agencies

A satellite-style map of the Caribbean Sea and surrounding landmasses, including Central America, the northern coast of South America, and the northern coast of Mexico. Numerous red lines are overlaid on the map, representing the tracks of tropical cyclones. These lines are dense and crisscross the Caribbean basin, extending from the Atlantic Ocean into the Gulf of Mexico and the Caribbean Sea. A yellow rectangular text box is positioned in the center-right of the image, containing two paragraphs of text.

Between 2023 and 2025, **NOAA records 33 tropical-cyclone systems in the Caribbean: 12 hurricanes (7 major) and 21 tropical storms.**

This is consistent with **IPCC assessments** that the share of **Category 3–5 storms** has likely **increased**, and cyclone rainfall is heavier **due to human-caused global warming.**



Human-driven warming elevates sea temperatures and atmospheric moisture, increasing **cyclone intensity**, rainfall, and surge.

Coupled with higher sea levels, this amplifies **Caribbean economic losses** by **damaging** coastal **infrastructure**, disrupting **tourism** and **trade**, and raising insurance and fiscal risk.

SARGASSUM

Similarly, the **rise in average sea temperature** has led to the **emergence** of a phenomenon that was largely unfamiliar prior to 2010, when it began to grow exponentially: **sargassum**.

Today, it is one of the **most significant challenges** facing the region's **tourism industry**.

SARGASSUM

CONCENTRATION
AUGUST 2010

0 100 200 km



HIGH CONCENTRATION

MEDIUM CONCENTRATION

SLIGHT CONCENTRATION

Note: Own elaboration using imagery from the University of South Florida Optical Oceanography Laboratory's Sargassum Watch System (SAWS), Caribbean region, dated 1 August 2010, 2015, 2020, 2022, and 2025. Accessed 3 October 2025. URL: <https://optics.marine.usf.edu/projects/saws.html>

SARGASSUM

CONCENTRATION
AUGUST 2022

0 100 200 km



Note: Own elaboration using imagery from the University of South Florida Optical Oceanography Laboratory's Sargassum Watch System (SAWS), Caribbean region, dated 1 August 2010, 2015, 2020, 2022, and 2025. Accessed 3 October 2025. URL: <https://optics.marine.usf.edu/projects/saws.html>

SARGASSUM

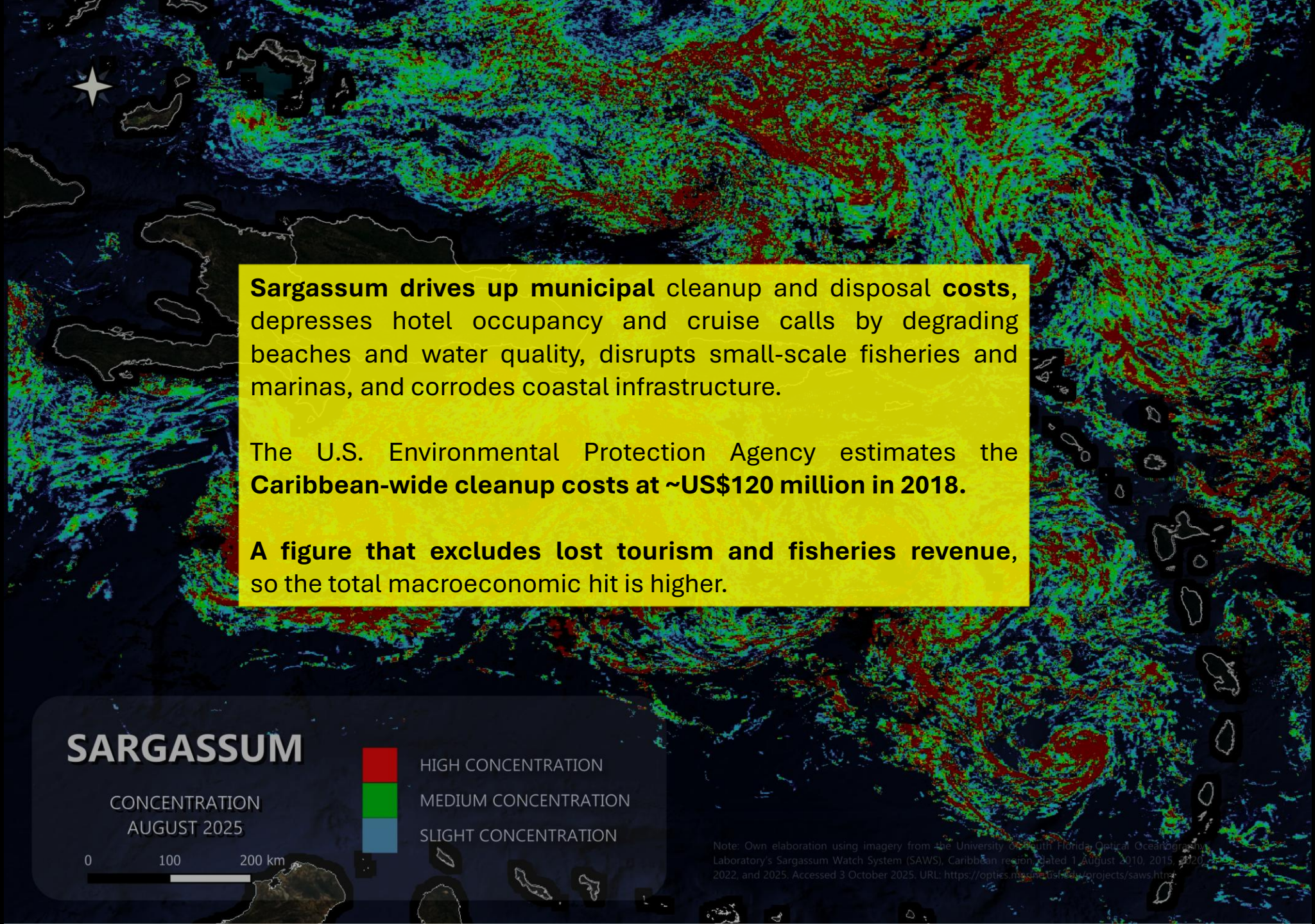
CONCENTRATION
AUGUST 2025

0 100 200 km



HIGH CONCENTRATION
MEDIUM CONCENTRATION
SLIGHT CONCENTRATION

Note: Own elaboration using imagery from the University of South Florida Optical Oceanography Laboratory's Sargassum Watch System (SAWS), Caribbean region, dated 1 August 2010, 2015, 2020, 2022, and 2025. Accessed 3 October 2025. URL: <https://optics.miami.edu/projects/saws.html>



Sargassum drives up municipal cleanup and disposal **costs**, depresses hotel occupancy and cruise calls by degrading beaches and water quality, disrupts small-scale fisheries and marinas, and corrodes coastal infrastructure.

The U.S. Environmental Protection Agency estimates the **Caribbean-wide cleanup costs at ~US\$120 million in 2018.**

A figure that excludes lost tourism and fisheries revenue, so the total macroeconomic hit is higher.

SARGASSUM

CONCENTRATION
AUGUST 2025

0 100 200 km

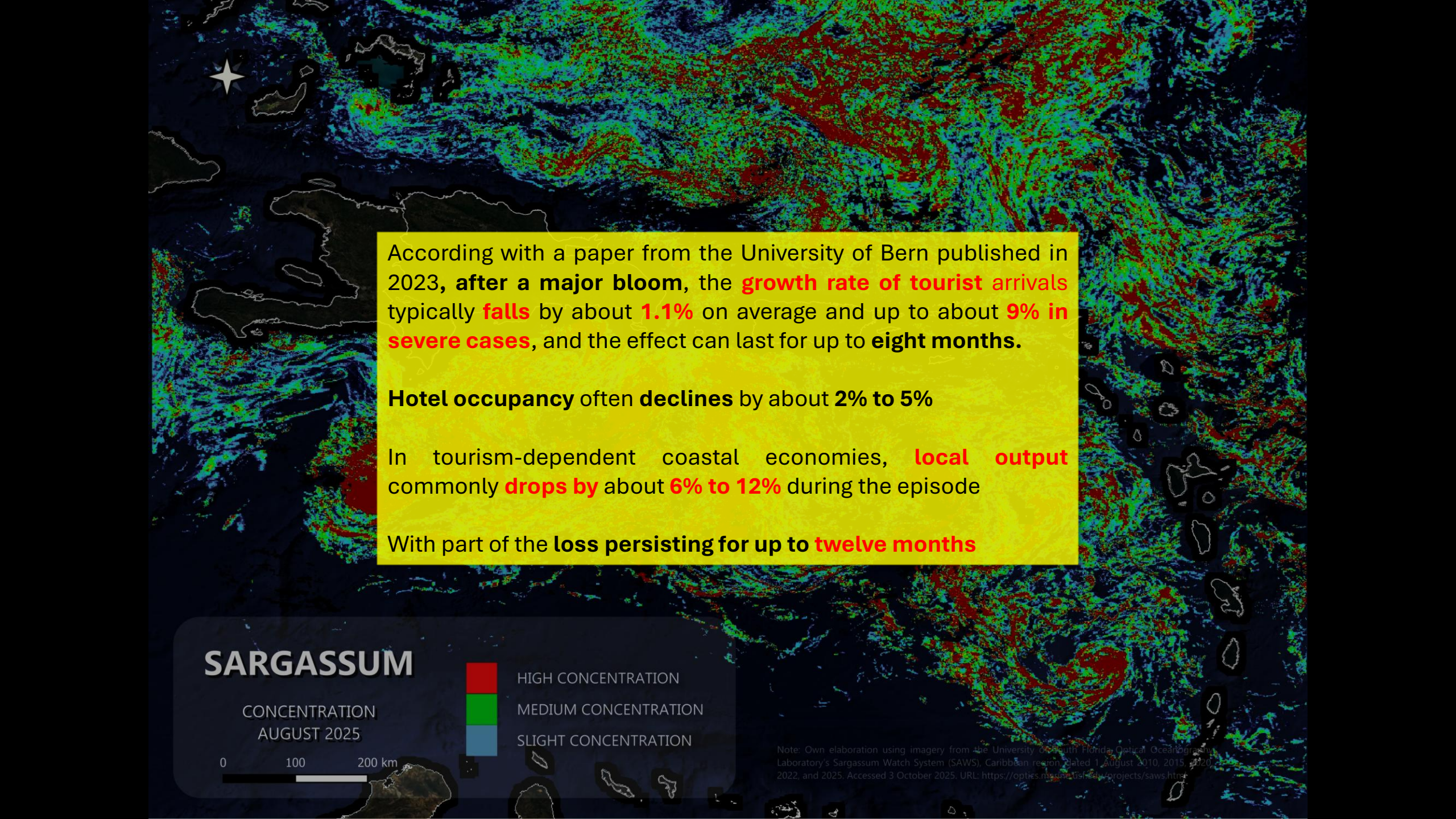


HIGH CONCENTRATION

MEDIUM CONCENTRATION

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SARGASSUM

CONCENTRATION
AUGUST 2025

0 100 200 km



HIGH CONCENTRATION

MEDIUM CONCENTRATION

SLIGHT CONCENTRATION

According with a paper from the University of Bern published in 2023, **after a major bloom**, the **growth rate of tourist arrivals** typically **falls** by about **1.1%** on average and up to about **9% in severe cases**, and the effect can last for up to **eight months**.

Hotel occupancy often **declines** by about **2% to 5%**

In tourism-dependent coastal economies, **local output** commonly **drops by** about **6% to 12%** during the episode

With part of the **loss persisting for up to twelve months**

Note: Own elaboration using imagery from the University of South Florida Optical Oceanography Laboratory's Sargassum Watch System (SAWS), Caribbean region, dated 1 August 2010, 2015, 2020, 2022, and 2025. Accessed 3 October 2025. URL: <https://optics.usf.edu/research/projects/saws.html>

FLOODING



RISK OF FLOODING

AREAS AT RISK OF FLOODING
IF SEA LEVEL RISES 2 METERS



FLOODED AREAS

0 250 500 km

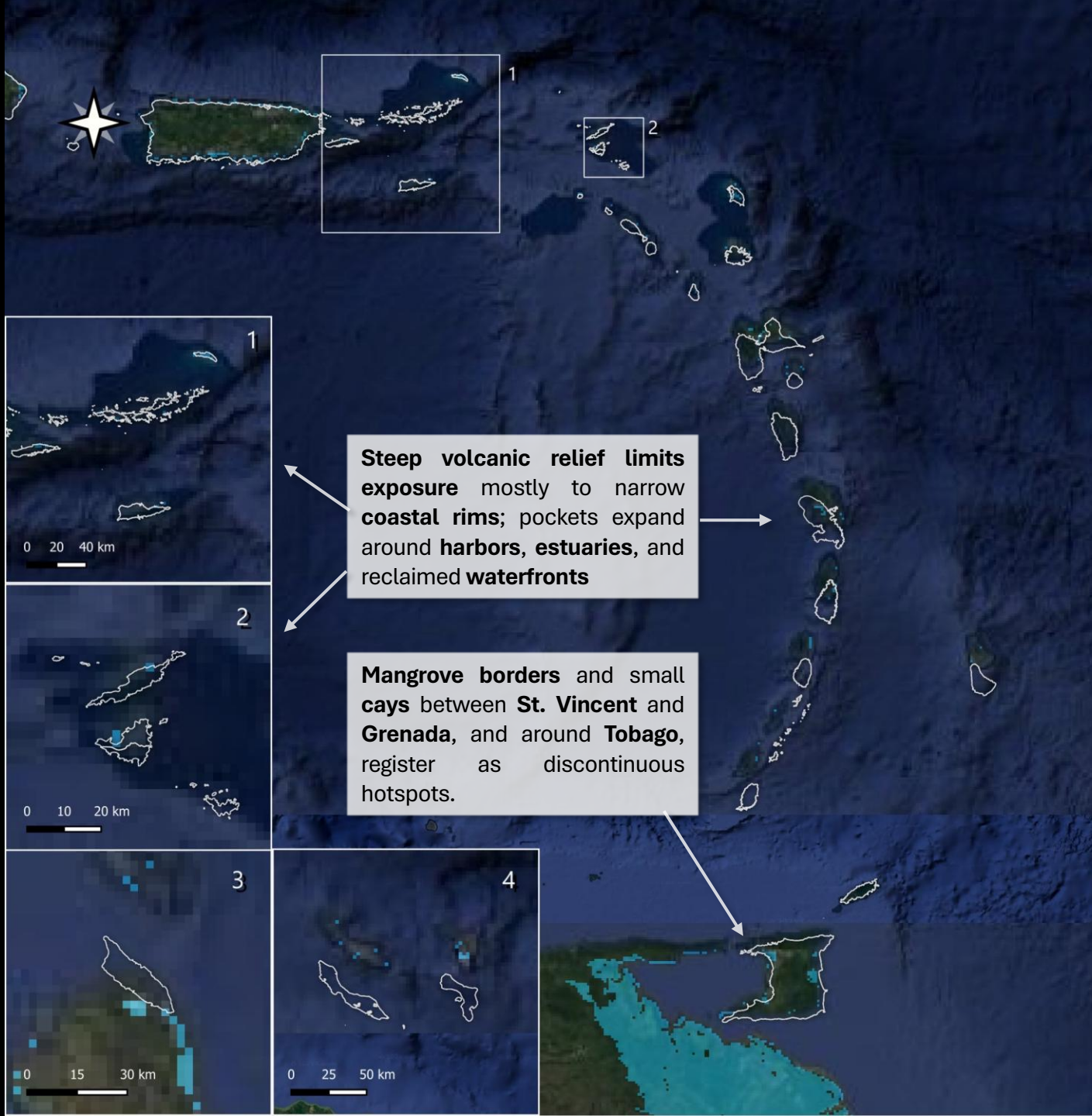
Tourism and trade infrastructure—ports, marinas, runways—**cluster** in the **vulnerable fringe**, making adaptation a logistics priority

Steep islands in the volcanic arc show **limited inland** **affection** under a 2-meter sea-level scenario

The **most continuous at-risk tracts** occur on the mainland's low, muddy **coasts**—**Belize** through **Guyana, Suriname, and French Guiana**

Note: Own elaboration using data from Climate Central's Coastal Risk Screening Tool (coastal.climatecentral.org), "Water level above MHHW" layer with the Best Available elevation model at a 2.0 m threshold (satellite basemap). Accessed 3 October 2025.





Steep volcanic relief limits exposure mostly to narrow **coastal rims**; pockets expand around **harbors, estuaries**, and reclaimed **waterfronts**

Mangrove borders and small **cays** between **St. Vincent and Grenada**, and around **Tobago**, register as discontinuous hotspots.

RISK OF FLOODING

AREAS AT RISK OF FLOODING
IF SEA LEVEL RISES 2 METERS

 FLOODED AREAS



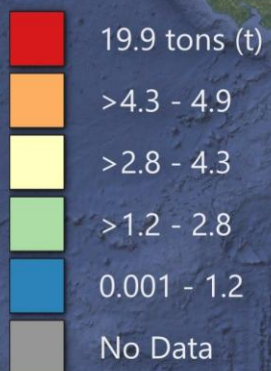
0 100 200 km

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CO2 EMISSIONS

CO2 EMISSIONS

2023 Tons CO2/capita



0 250 500 km

Haiti presents the **regional low** end, well below the rest of Hispaniola and the wider basin.

Trinidad & Tobago is the clear **outlier**, with far higher per-person emissions than any other economy shown.

It also ranks 6th worldwide

Puerto Rico sits in the **upper tier** among island economies, above its nearest neighbors

RANKING

1. Qatar: 81.2t
2. Bahrein: 48.2t
3. Kuwait: 23t
14. United States: 13.9t

Source: The World Bank, World Development Indicators (WDI) — Carbon dioxide (CO2) emissions excluding LULUCF per capita (indicator EN.GHG.CO2.PC.CE.AR5; EDGAR Community GHG Database).

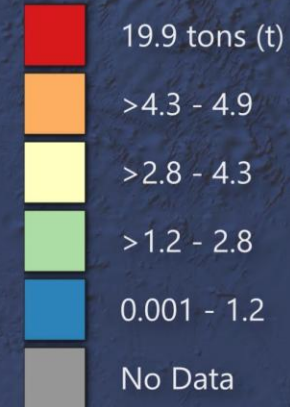
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RANKING

1. QATAR: 81.2t
2. BAHRAIN: 48.2t
3. KUWAIT: 23t
14. U.S.: 13.9t

CO2 EMISSIONS

2023 Tons CO₂/capita



0 150 300 km

Turks and Caicos aligns with the broader Caribbean middle

Turks and Caicos

4.2 Bahamas

Cuba

2.0

2.2

2.8

4.9

Cayman Islands

2.4 Jamaica

Haiti

0.3

Republica Dominicana

Puerto Rico

4.3

Haiti remains the lowest point on the island chain, creating a sharp within-island contrast on Hispaniola

Puerto Rico stands above Cuba, Jamaica, and the Dominican Republic on a per-capita basis.

Belize

0.7

0 100 200 km

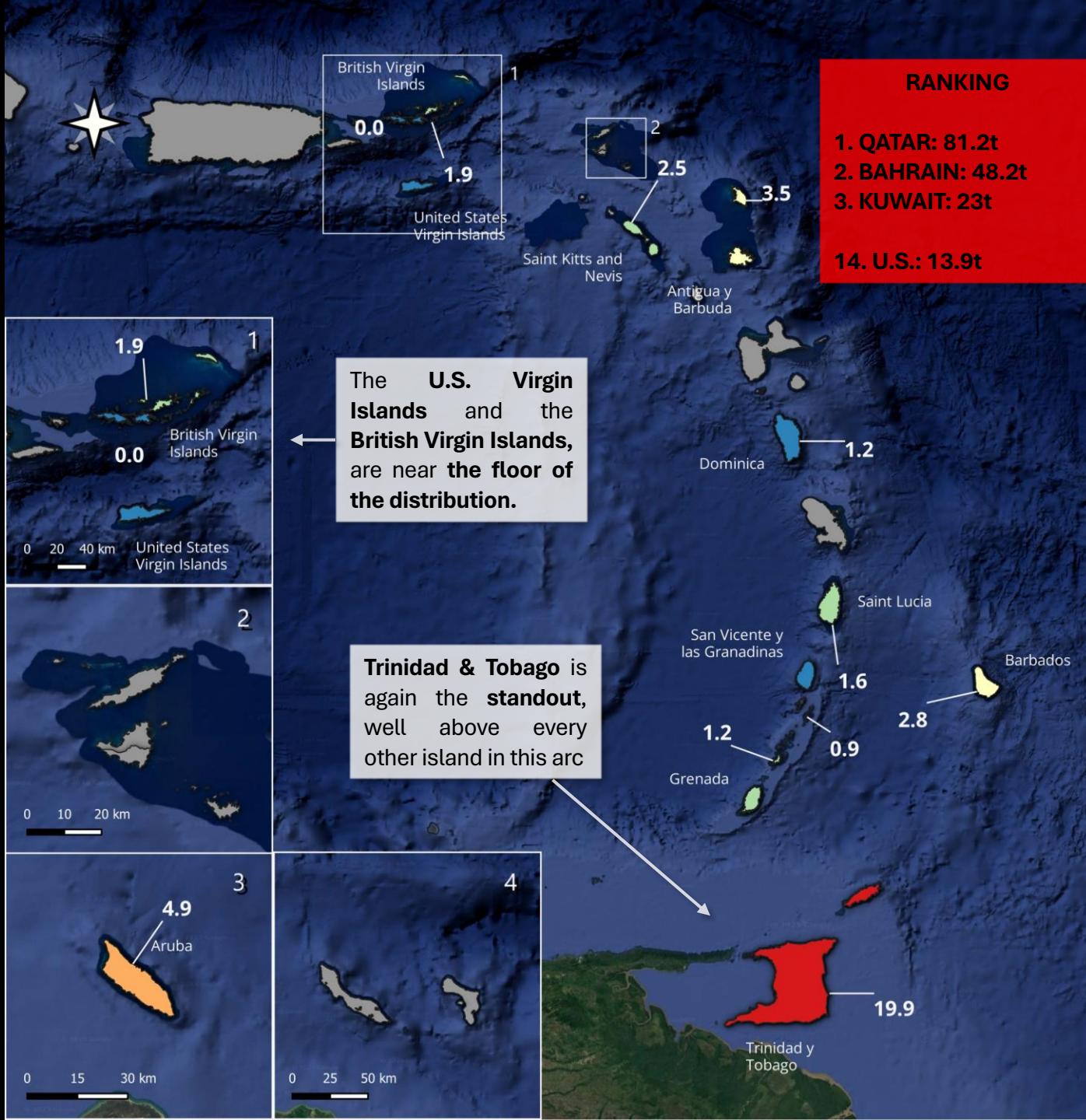
4.2 Guyana

4.0

Surinam

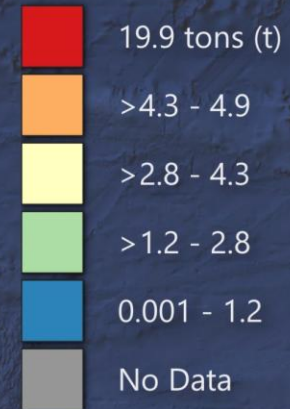
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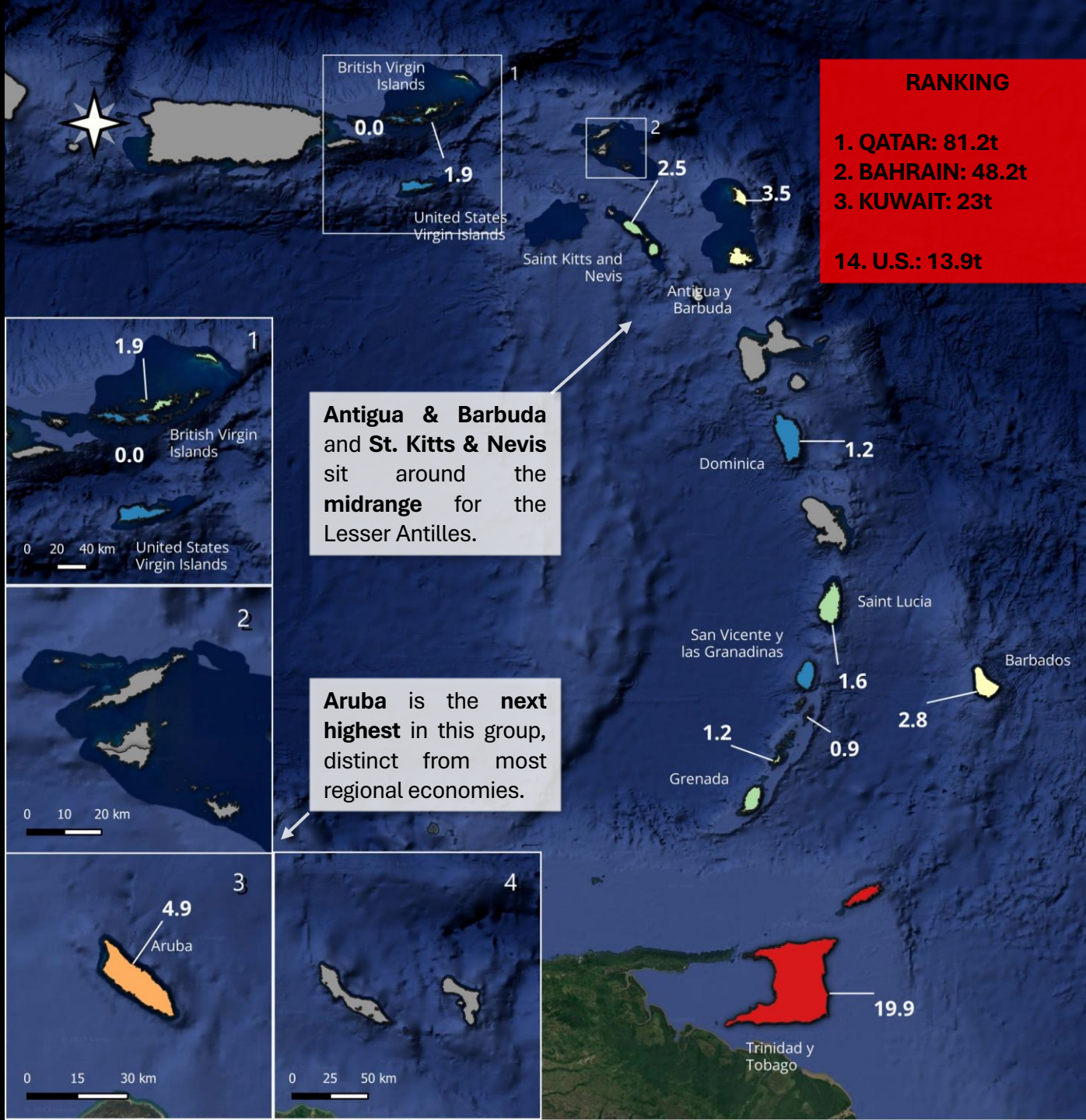
CO2 EMISSIONS

2023 Tons CO2/capita



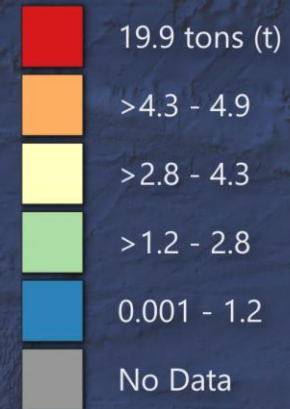
0 100 200 km

Source: The World Bank, World Development Indicators (WDI) — "Carbon dioxide (CO2) emissions excluding LULUCF per capita" (indicator EN.GHG.CO2.PC.CE.AR5; EDGAR Community GHG Database).
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CO2 EMISSIONS

2023 Tons CO₂/capita



0 100 200 km

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CO2 EMISSIONS (%)

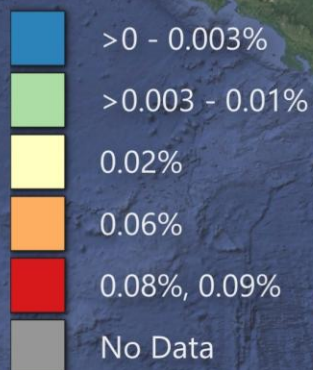


RANKING

1. CHINA: 31.5%
2. UNITED STATES: 13%
3. INDIA: 8.1%

CO2 EMISSIONS

Share of Global Contribution
2023



0 250 500 km

The **Dominican Republic** is the **next-biggest** emitter among the islands, ahead of Cuba.

Trinidad & Tobago is the region's **largest contributor** to the global total

The **Guianas** add **noticeable**—yet **still globally minor**—contributions compared with most islands.

Source: Our World in Data — "CO₂ emissions per capita" (data from Global Carbon Budget 2024; processed by Our World in Data).

Note: Categories defined according with Jenks' Method.

Own elaboration with information from Humanitarian Data Exchange (HDX) COD-AB administrative boundaries; the World Bank World Development Indicators (WDI) repository; and, for productivity and minimum wage measures, ILOSTAT repositories, accessed August 27, 2025.

0.002%

0.06%

0.02%

0.007%

0.001%

0.009%

0.08%

0.0005%

0.002%

0.0004%

0.0006%

0.0004%

0.002%

6e-05%

0.0006%

0.0009%

0.003%

0.001%

0.09%

0.009%

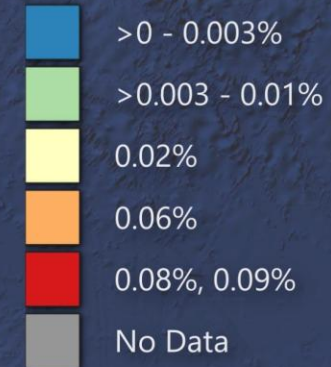
0.007%

RANKING

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CO2 EMISSIONS

Share of Global Contribution
2023



0 150 300 km

0.007%

Turks and
Caicos

0.001%

Cuba
0.06%

Republica
Dominicana

Cuba follows as **third** biggest
emissor, with **Jamaica** well below
the two **largest** contributors.

Jamaica

0.02%

Haiti

0.009%

0.08%

Within this **subregion**, the
Dominican Republic leads.

Belize

0.002%

0 100 200 km

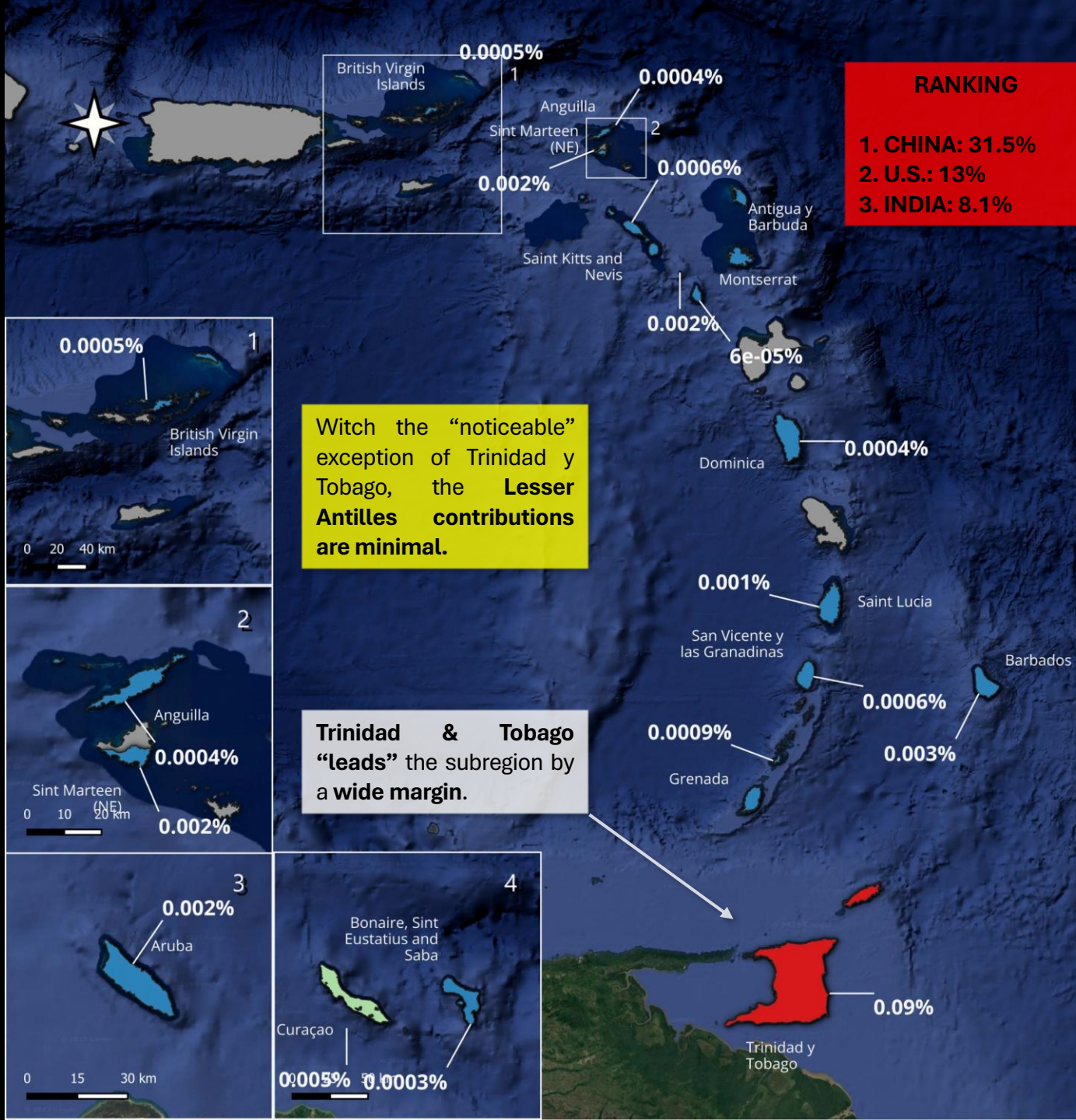
Guyana

Surinam

0.009%

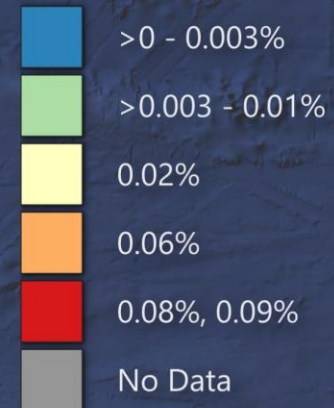
0.007%

Note: GDP constant 2021 international \$ at PPP, categories defined according with Jenks' Method. Own elaboration with information from Humanitarian Data Exchange (HDX) COD-AB administrative boundaries; the World Bank World Development Indicators (WDI) repository; and, for minimum wage and productivity measures, ILOSTAT repositories, accessed August 27, 2025.
Source: Our World in Data — "CO₂ emissions per capita" (data from Global Carbon Budget 2024; processed by Our World in Data).



CO2 EMISSIONS

Share of Global Contribution
2023

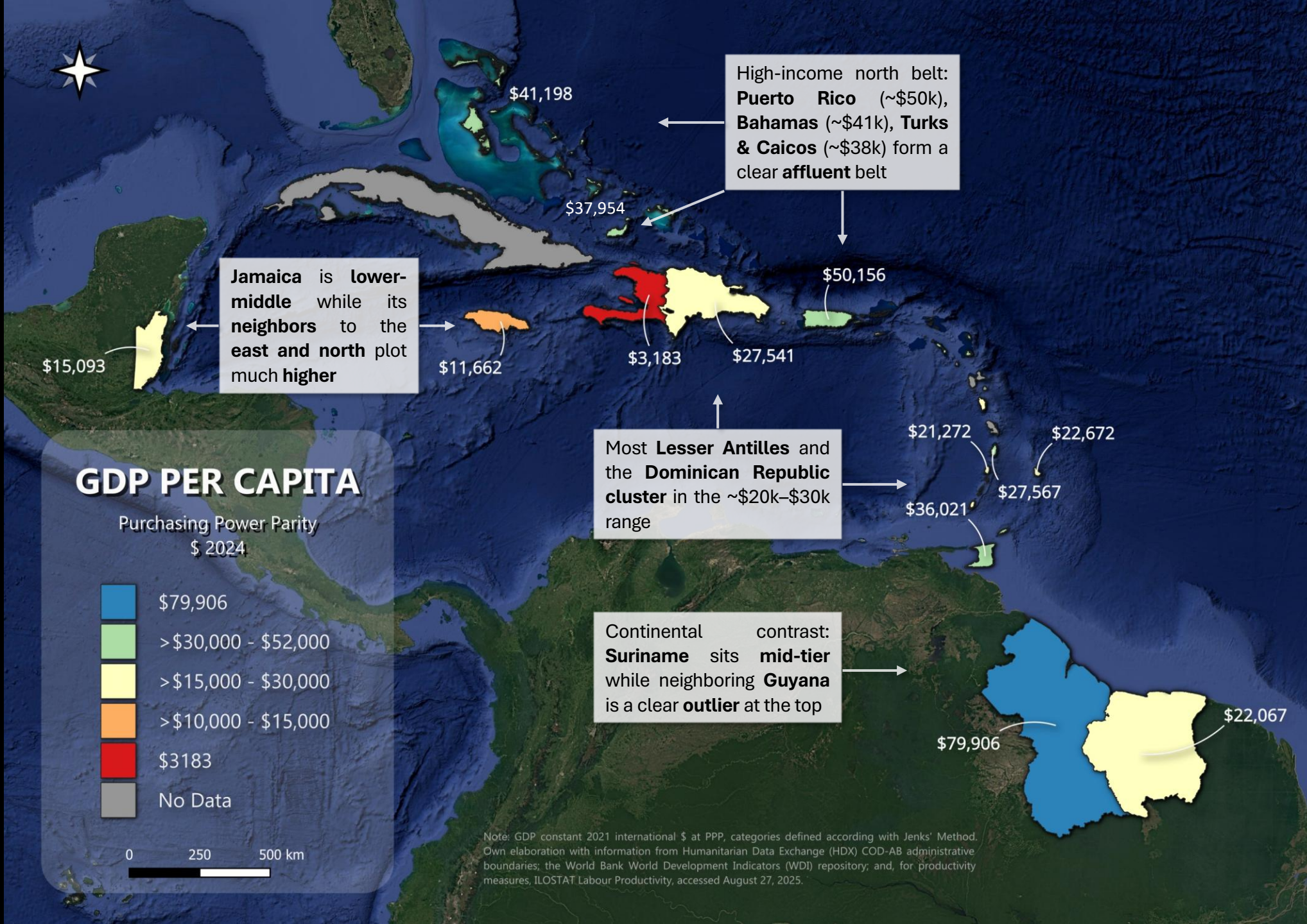


0 100 200 km

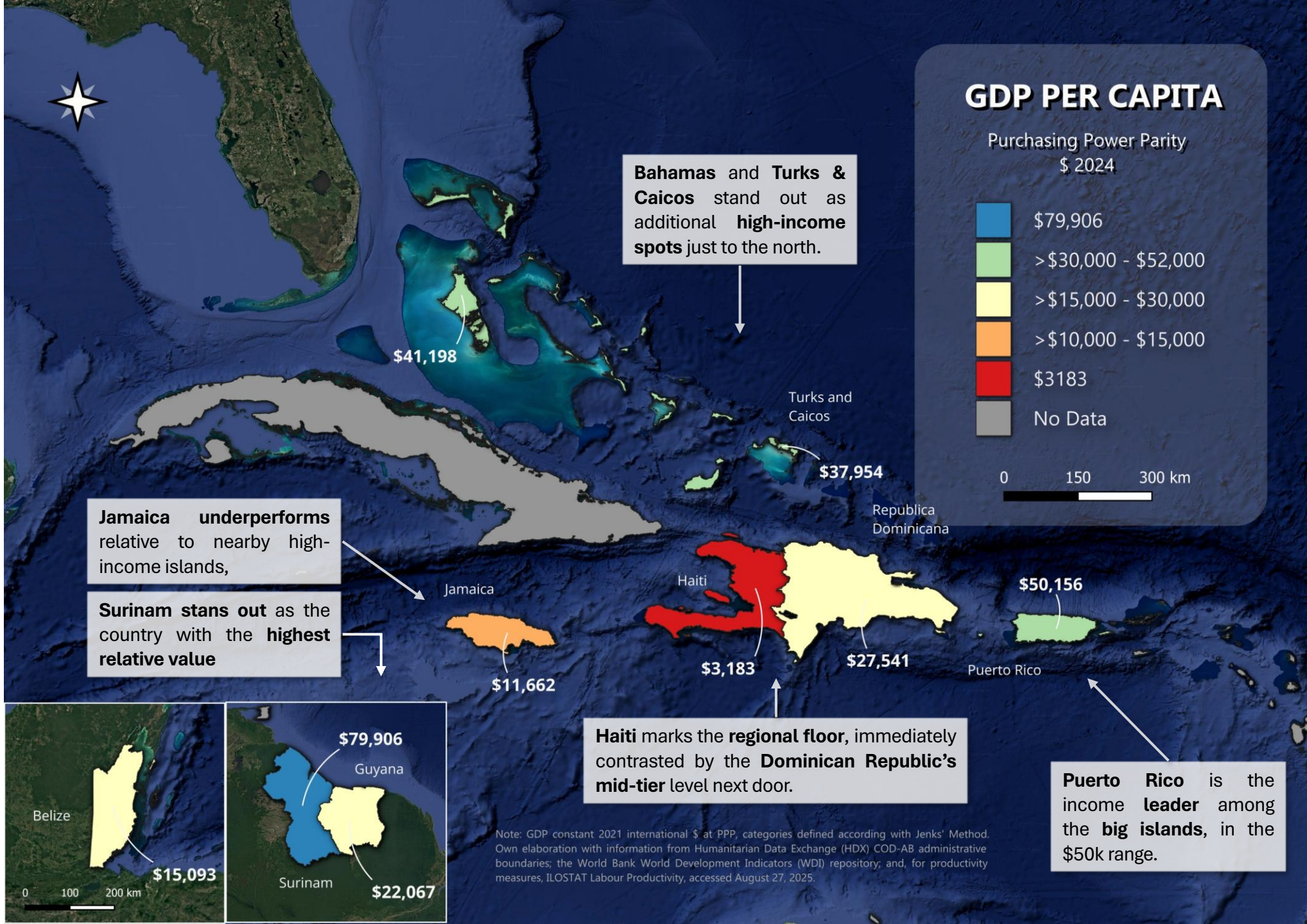
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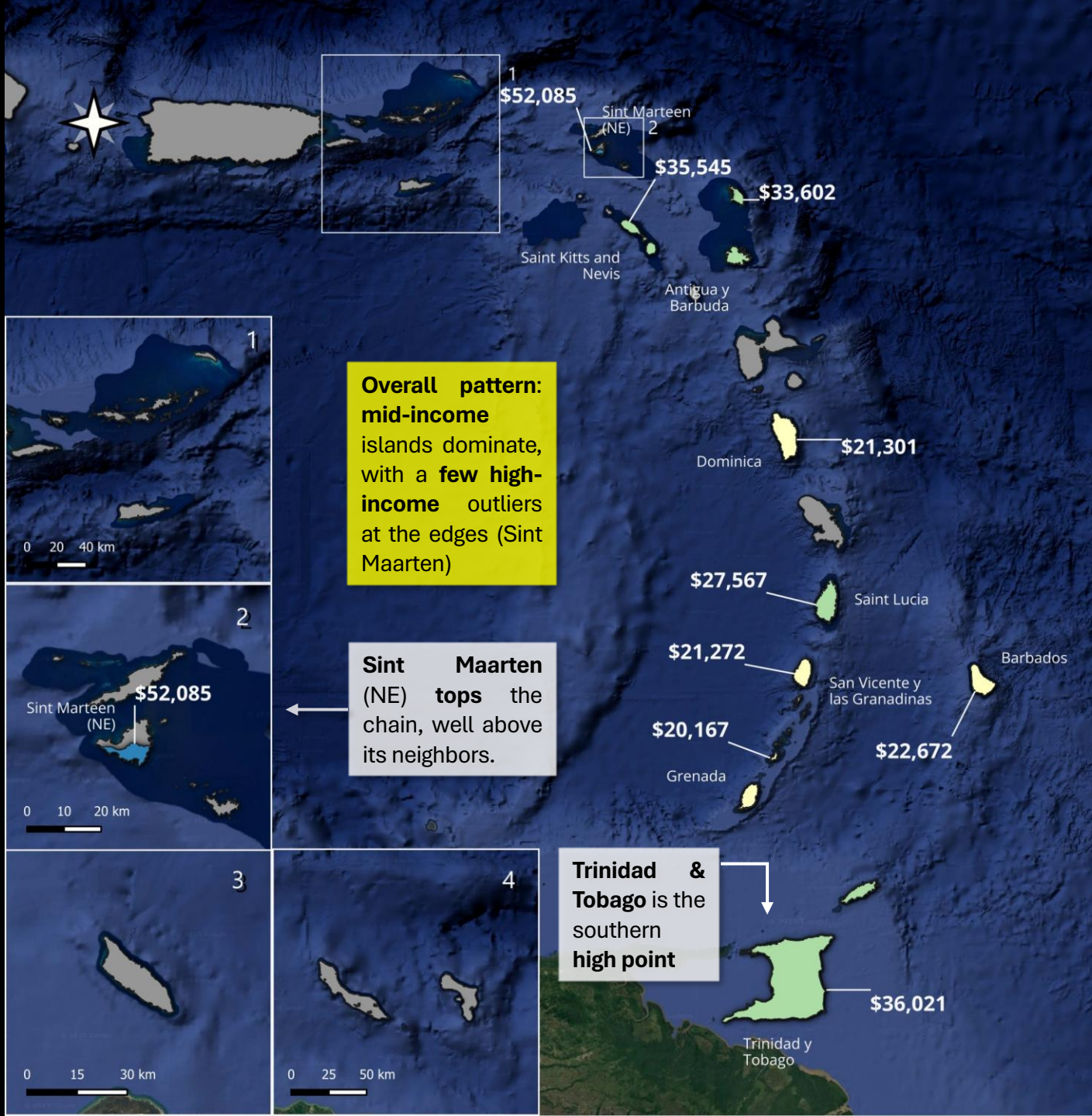
DEVELOPMENTAL OVERVIEW

GDP PER CAPITA



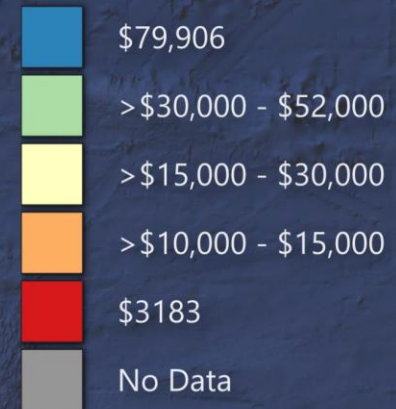
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GDP PER CAPITA

Purchasing Power Parity
\$ 2024



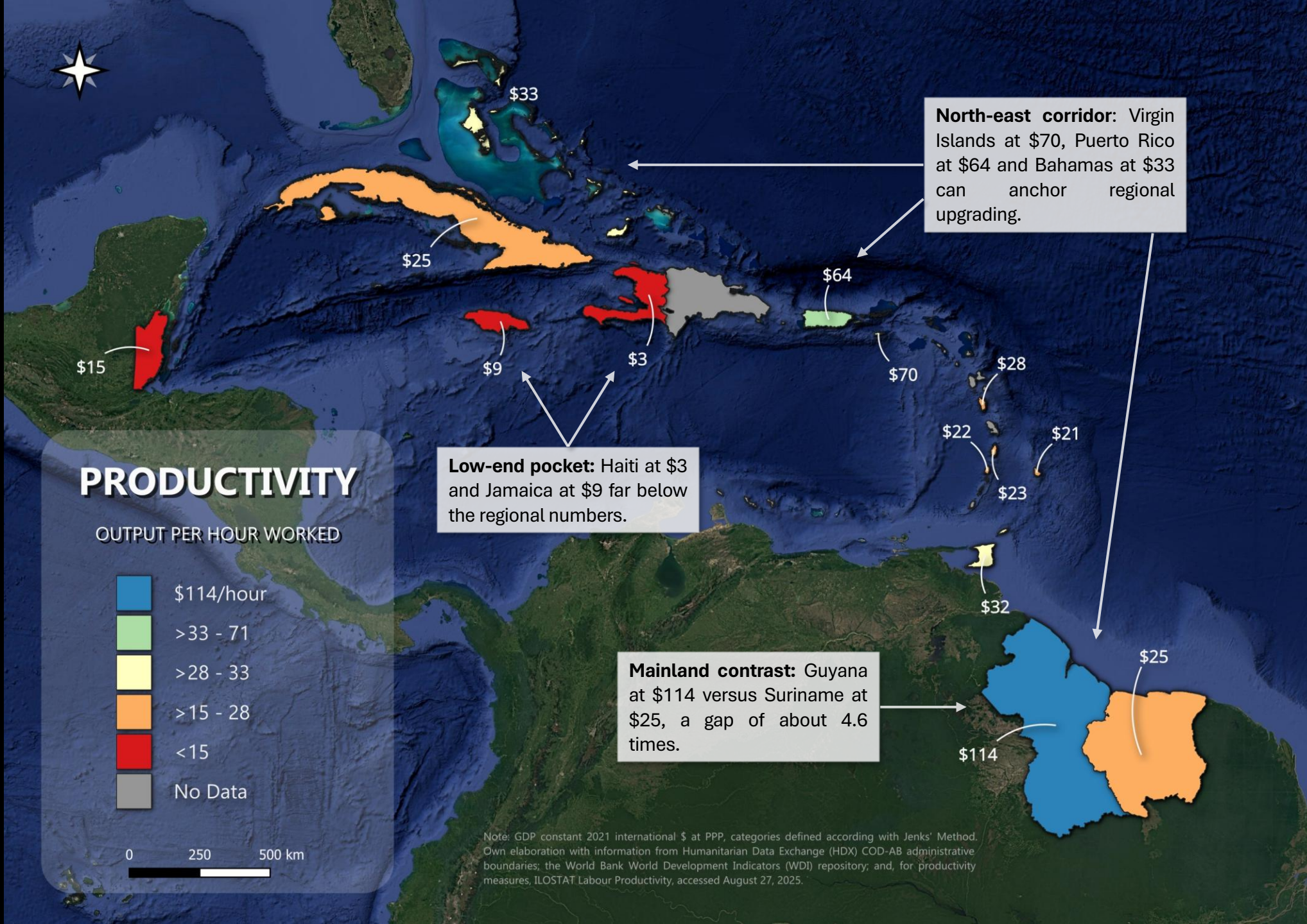
0 100 200 km

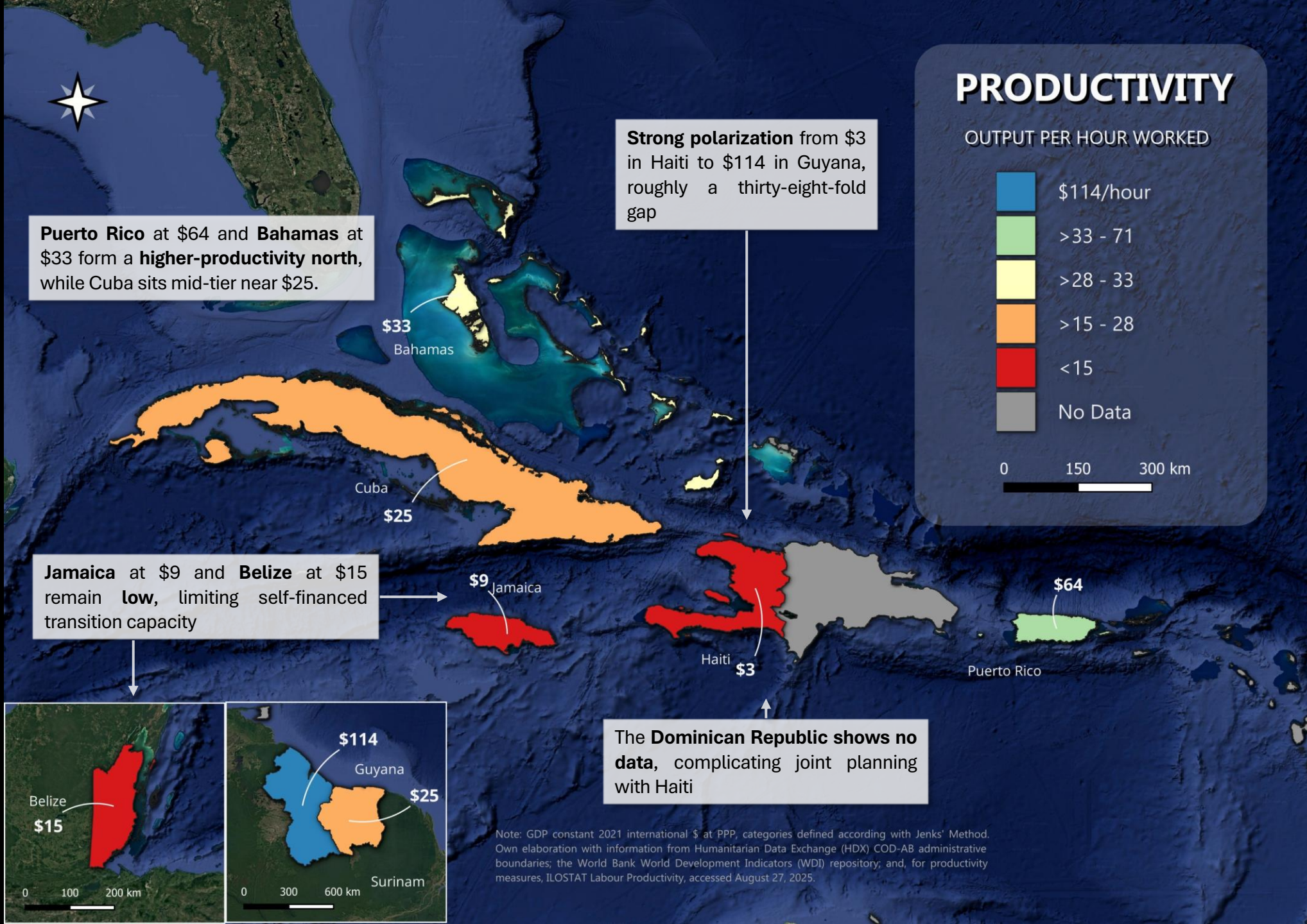
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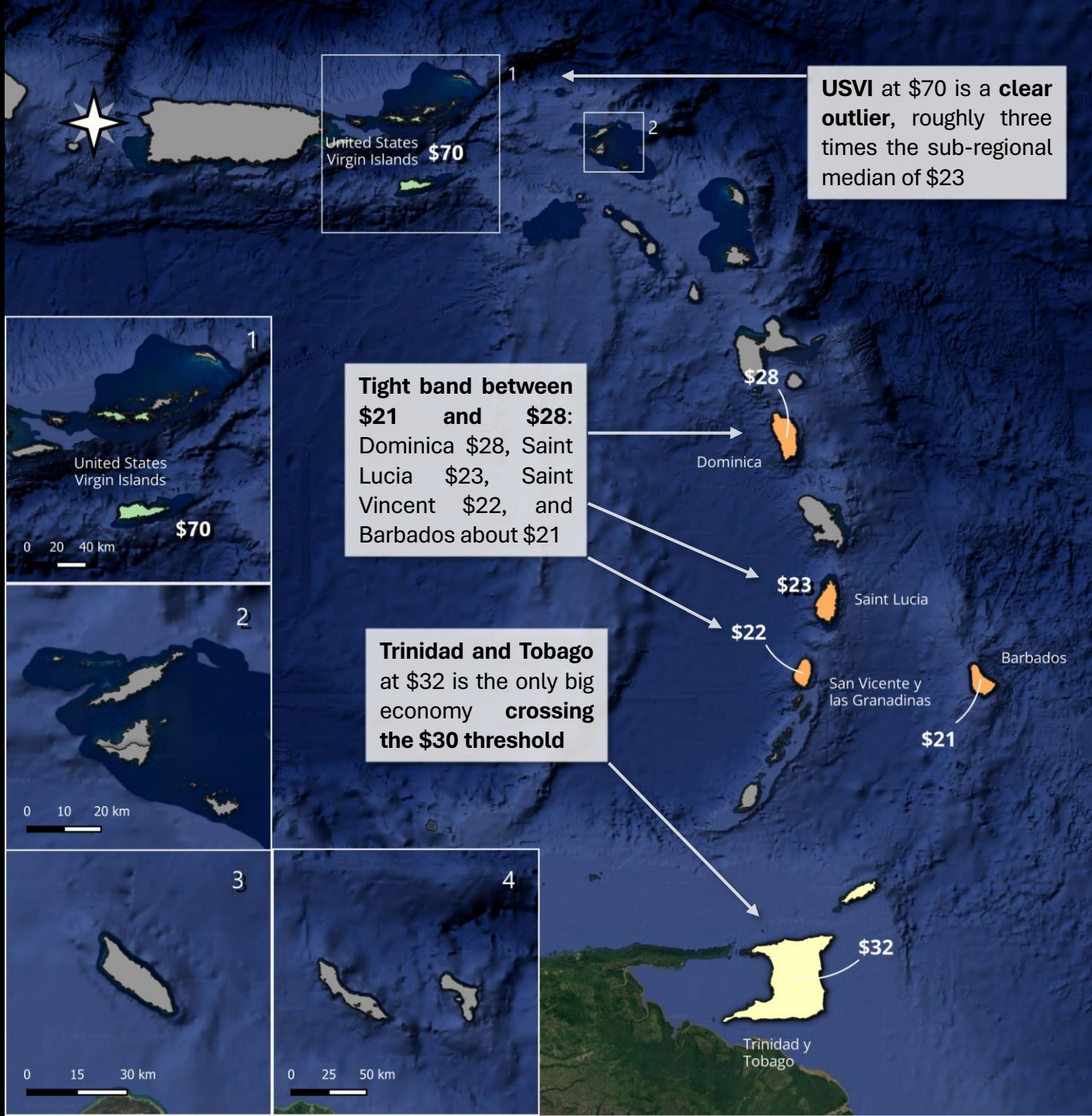
PRODUCTIVITY

WHAT PRODUCTIVITY?

- **Common productivity measures** include output per worker, **output per hour**, and **overall productivity** for the economy.
- **Output per hour worked** means total output divided by total hours worked, showing average production per hour.
- **In this case**, we use ILO Modelled Estimates (*Constant 2021 international \$ at PPP*) to calculate output per hour for 2021–2025, and we derive year-over-year productivity growth rates for each country.







USVI at \$70 is a **clear outlier**, roughly three times the sub-regional median of \$23

PRODUCTIVITY

OUTPUT PER HOUR WORKED



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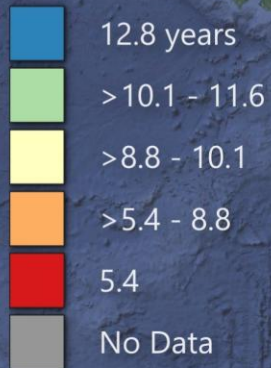
MEAN YEARS OF SCHOOLING

RANKING

1. ICELAND: 16.9
2. SWITZ.: 16.9
3. LITHUANIA: 13.6

MEAN YEARS OF SCHOOLING

UNDP, 2023



0 250 500 km

The **Bahamas** shows the **upper end** of the regional distribution.

The **eastern region** — from Antigua and Barbuda down to Barbados — generally falls in the **mid-to-high band** relative to the region

The largest **subregional gap** appears between **Haiti and nearby islands**, underscoring a stark contrast in expected schooling

Trinidad and Tobago ranks above other continental neighbors, closer to stronger island performers

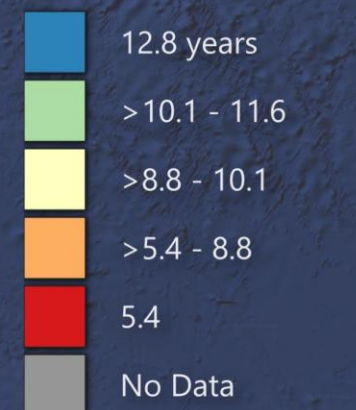
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MEAN YEARS OF SCHOOLING

UNDP, 2023



0 150 300 km

The Bahamas leads the subregion on expected years of female schooling

12.8
Bahamas

10.6
Cuba

Cuba posts high values compared with its large-island peers.

Jamaica

10

Haiti

5.4

Republica Dominicana

9.4

Belize

8.8

0 100 200 km

Guyana

Surinam

8.7

8.4

Jamaica sits around the middle of the subregional range.

Haiti marks the lowest level in the subregion and stands out as the outlier

Note: GDP constant 2021 international \$ at PPP, categories defined according with Jenks' Method. Own elaboration with information from Humanitarian Data Exchange (HDX) COD-AB administrative boundaries; the World Bank World Development Indicators (WDI) repository; and, for productivity measures, ILOSTAT Labour Productivity, accessed August 27, 2025.

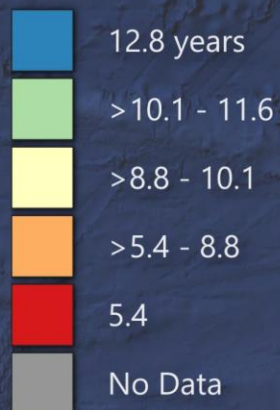
RANKING

1. ICELAND: 16.9
2. SWITZ.: 16.9
3. LITHUANIA: 13.6

Differences across adjacent islands are **modest**, with a few clear standouts at both ends

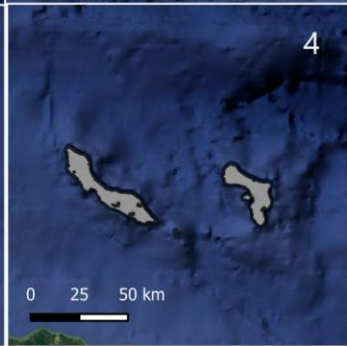
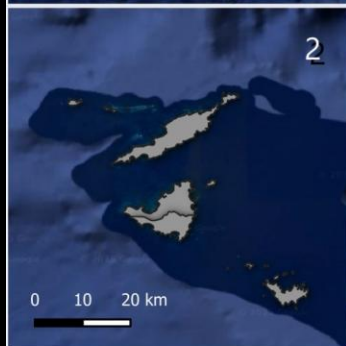
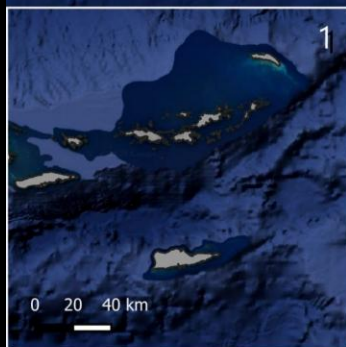
MEAN YEARS OF SCHOOLING

UNDP, 2023



0 100 200 km

Note: GDP constant 2021 international \$ at PPP, categories defined according with Jenks' Method. Own elaboration with information from Humanitarian Data Exchange (HDX) COD-AB administrative boundaries; the World Bank World Development Indicators (WDI) repository; and, for productivity measures, ILOSTAT Labour Productivity, accessed August 27, 2025.



Antigua and Barbuda, St Kitts and Nevis, and St Vincent and the Grenadines **cluster near the top** within the chain

Saint Kitts and Nevis

Antigua y Barbuda

Dominica

Saint Lucia

San Vicente y las Granadinas

Barbados

Grenada

Trinidad y Tobago

10.8

11.6

10.1

8.6

11.3

9.4

9.9

10.8

An aerial photograph of a coastal wetland or estuary, showing intricate patterns of water, mudflats, and vegetation. The image is overlaid with a semi-transparent blue filter. Centered on this background is a large white text block.

What role can Employers and Business-Membership Organizations take?

Member services

- ESG (*Environmental, Social, Governance*)
- Labor inclusion practices
(Example: CBI campaign recommending certain guidelines and KPIs)
- Efficiency in the use of resources and environmental impact
(Satellite monitoring by GREPALMA)
- Skills development initiatives
(MSME Hospital)

2. Public Policy Advocacy

- Gathering data and information on member preferences on the sustainability agenda
- Promotion of a sustainable policy agenda with the general public
(Japan Business Organization developed an agenda for "Green Transformation" towards 2050).
- Dialogue with governments for regulatory and public policy improvement

3. Strategic alliances

- Establish links with academia for the development of research and access to information
(decarbonization plans based on scientific studies).
- Creating a common agenda with members and other key stakeholders to advance projects and policies.
- Forming strategies for just transition at the sectoral level