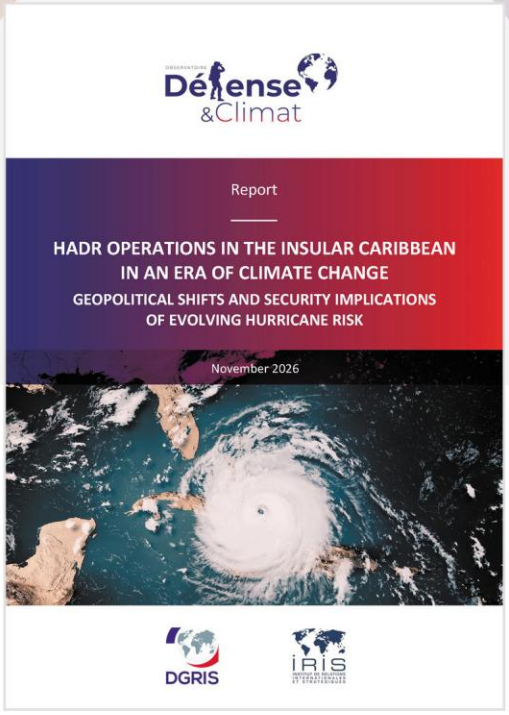
SUMMARY

HADR OPERATIONS IN THE INSULAR CARIBBEAN IN AN ERA OF CLIMATE CHANGE

November 2026



The Defence and Climate Observatory, launched in December 2016, aims to study climate-related security and defence issues.

It is coordinated by IRIS as part of the contract carried out on behalf of the French Ministry of Armed Forces's Directorate General for International Relations and Strategy (DGRIS). The Observatory's multi-disciplinary team includes researchers specializing in international relations, security, defence, migration, energy, economics, climatology and health. It is directed by Mathilde Jourde and François Gemenne.

The Observatory has initiated numerous collaborations with European partners (Netherlands, Luxembourg) and international partners (Australia, United States, India), international NGOs and national and international public bodies. These initiatives have strengthened cooperation on climate issues and their security implications.

The Climate and Defence Observatory produces reports and notes, organises restricted seminars and conferences open to the public, and hosts the podcast "On the climate front".

www.defenseclimat.fr/en

The Ministry of Armed Forces regularly calls upon private research institutes for outsourced studies, using a geographical or sectoral approach to complement its internal expertise. These contractual relationships are part of the development of the defence foresight approach, which, as emphasised in the latest White Paper on Defence and National Security, *"must be able to draw on independent, multidisciplinary and original strategic thinking, integrating university research as well as specialised institutes*".

Many of these studies are made public and available on the Ministry of Armed Forces website. In the case of a study published in part, the Directorate General for International Relations and Strategy may be contacted for further information.

DISCLAIMER: The Directorate General for International Relations and Strategy or the organisation leading the study cannot be held responsible for the statements made in the studies and observatories, nor do they reflect an official position of the Ministry of Armed Forces.

©Observatoire Défense et Climat / IRIS – All rights reserved

ABOUT THE AUTHORS OF THIS NOTE



Laurent Giacobbi / IRIS

Laurent Giacobbi is a Research Associate Fellow at IRIS and a lecturer at the Université des Antilles.

A graduate of Sciences Po Strasbourg and the Institut des Hautes Études Européennes (IHEE) in the history of international relations, he is currently working on the geopolitics of Latin America and the Caribbean. A researcher at the Laboratoire caribéen de sciences sociales (LC2S) and a defence and security teacher (REDS), he is interested in the links between climate change, humanitarian action and armed forces.

An auditor of the Institut des hautes études de défense nationale (IHEDN) and reserve officer with the Forces armées aux Antilles (FAA), he is in charge of geostrategic monitoring of the Caribbean zone for the General Staff (defence and security issues, foreign influences, crisis zones, etc.).

MAPS

Antoine Diacre / Head of Data, Cartography and Infographics, IRIS

©Observatoire Défense et Climat / IRIS – All rights reserved

The **insular Caribbean is a fragmented geographical and geopolitical space** stretching more than 4,000 km from Mexico's Yucatán Peninsula to the coast of Venezuela. It comprises 13 sovereign states[1] and 17 American[2], British[3], French[4] and Dutch[5] "micro-island territories" with highly diverse statuses (Giacobbi, 2025). The region is characterised by its maritime nature (Domergue, 2024), its "archipelagic fragmentation"[6] (Audebert, 2022), a history shaped by colonisation, the plantation economy and slavery (Sainton, 2004), and considerable economic[7] and cultural diversity (Cruse, 2011).

The region nonetheless forms a **coherent strategic space**. Located at the crossroads of the Americas, close to the Panama Canal and to major trade, migration and drug-trafficking routes, it remains closely bound up with US security interests.

Hurricane risk is one of the main unifying factors of this vulnerable region, where major hurricanes can strike populations and infrastructure that are often concentrated along the coast. In small island states, a hurricane can quickly overwhelm national capacities. In such circumstances, **humanitarian assistance and disaster relief (HADR) operations bring together local administrations, regional organisations, international institutions, humanitarian actors and armed forces**. The armed forces intervene mainly in the early phases of a crisis, drawing on their projection, command and support capabilities.

Building on previous work by the Defence and Climate Observatory[8], this note examines changing hurricane risk, the organisation of the HADR architecture and the tensions within it, and the geopolitical shifts it reveals. It concludes with strategic directions for the armed forces, aimed both at consolidating their international cooperation and at continuing their operational adaptation.

[1] Antigua and Barbuda, the Bahamas, Barbados, Cuba, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago.
[2] Puerto Rico and the US Virgin Islands.
[3] Anguilla, the British Virgin Islands, the Cayman Islands, Montserrat, and the Turks and Caicos Islands.
[4] Guadeloupe, Martinique, Saint Barthélemy and Saint Martin.
[5] Aruba, Bonaire, Curaçao, Saba, Sint Eustatius and Sint Maarten.
[6] The Bahamas comprise some 700 islands and more than 2,000 cays, only around forty of which are permanently inhabited.
[7] Three main regional organisations coexist, with different geographical scopes and degrees of integration: the Organisation of Eastern Caribbean States (OECS), the Caribbean Community (CARICOM) and the Association of Caribbean States (ACS).
[8] In 2021, GDP per capita ranged from USD 1,883 in Haiti to USD 27,476 in the Bahamas.

I. CLIMATE CHANGE AND EVOLVING HURRICANE RISK

A – Tropical cyclones: definition, measurement and tracks

A tropical cyclone is a **rotating weather system** organised around an area of very low pressure and fuelled by energy exchanges between the warm ocean and the atmosphere. Its formation, known as cyclogenesis, requires several conditions[9]. In the North Atlantic, this extreme weather phenomenon is known as a **hurricane**; in the North-West Pacific, the same storms are called **typhoons**.

The Saffir-Simpson scale classifies hurricanes into five categories according to maximum wind speed, with Categories 3, 4 and 5 regarded as major hurricanes. Between 1951 and 2024, 888 named storms were recorded in the Atlantic basin, including 469 hurricanes. Of these, 185 reached major hurricane status and 28 reached Category 5. **The insular Caribbean was affected by 103 of these systems.**

B – Changing hurricane risk under climate change

Towards a qualitative transformation of cyclones

Several scientific studies project **a stagnation, or even a decline, in the total number of tropical cyclones in some basins**. However, they point to **an increase in the proportion of the most intense events**, notably Category 4 and 5 hurricanes. The changing nature of the risk therefore lies more in the destructive potential of these events than in their number.

Rapid intensification is a second decisive change. It refers to **a sharp increase in a cyclone's intensity over a short period[10]**, sometimes several times over, including as the system approaches the coast. This phenomenon shortens warning lead times and complicates the prepositioning of relief. **Spatial changes** are also possible, notably tracks shifting further north, as are seasonal changes, with a longer exposure period.

The hydrologisation of hurricane risk in the Caribbean

The most far-reaching change for Caribbean territories concerns **the growing importance of hydrological hazards. Extreme rainfall, flash floods and landslides** can cause damage as severe as that caused by wind. Many projections point in particular to **a significant increase in rainfall near the core of cyclones**, while some studies estimate that climate change has already increased the intensity of associated rainfall by around 15%.

[9] A sea surface temperature generally above 26.5–27°C, a sufficiently deep layer of warm ocean water, an unstable and humid atmosphere, low vertical wind shear, a pre-existing initial disturbance, and sufficient distance from the equator for the Coriolis force to take effect.
[10] Most studies set the threshold at a gain of at least 25 or 30 knots in 24 hours.

The **marine dimension completes this hydrologisation**[11]. **Storm surges** are among the deadliest hazards. Wave setup[12] plays a major role in the maximum sea levels reached at the shoreline during hurricanes, while **extreme waves** associated with cyclones could also increase. This combination of rainfall, river floods, storm surge, waves and extreme sea levels can produce compound flooding, with **greatly amplified destructive effects** on populations and infrastructure.

II. THE CARIBBEAN HADR ARCHITECTURE: A MULTI-LEVEL SYSTEM UNDER STRAIN

A – A dense and complex HADR ecosystem

Disaster response in the Caribbean rests on a **multi-level governance architecture** which brings together local actors, regional organisations, international institutions and armed forces.

Civilian organisations: from national response to regional governance

The first level of response consists of national disaster management agencies. Every state in the insular Caribbean now has a permanent body responsible for initial crisis management decisions, the activation of emergency plans, damage assessment and requests for international assistance.

When national capacities are overwhelmed, **regional and international mechanisms take over**. The **United Nations**, through **OCHA** (*Office for the Coordination of Humanitarian Affairs*) and UNDAC (*United Nations Disaster Assessment and Coordination*) teams, contribute to the assessment and coordination of aid. **The European Union** acts notably through DG ECHO (Directorate-General for European Civil Protection and Humanitarian Aid Operations), the EU Civil Protection Mechanism and Copernicus mapping data.

At the **regional level**, the ***Caribbean Disaster Emergency Management Agency*** (CDEMA) is the main **centre of gravity of regional governance**. Established in 1991, this agency of the Caribbean Community (CARICOM) is responsible for disaster response, risk reduction and climate change adaptation. The French Red Cross's **Regional Intervention Platform for the Americas and the Caribbean** (PIRAC), based in Guadeloupe, rounds out this architecture with its prepositioned stocks and response teams.

[11] *Hydrologisation* refers to the growing share of hydrological components (extreme rainfall, floods, inundation) in the manifestation of cyclone risk.
[12] A rise in the mean water level near the shoreline caused by breaking waves.

Military actors: the operational backbone of the HADR response

The **armed forces support civilian authorities** by deploying their **projection, transport and command capabilities**, which are essential to the early phases of a crisis. Their action focuses notably on reopening access to cut-off areas, delivering aid and restoring logistical capacity, before gradually giving way to the civilian actors responsible for long-term assistance and reconstruction. At the regional level, the *Regional Security System* (RSS), based in Barbados, and the *CARICOM Disaster Relief Unit* (CDRU) organise regional contributions, but **the projection capabilities of these small island states' armed forces remain limited**.

Among external actors, ***United States Southern Command* remains the main provider of military capabilities**. With its joint structure, its naval, amphibious and air assets, and its logistical capabilities, it can rapidly project substantial resources across the entire Caribbean basin, as in the HADR operations conducted after Hurricanes Matthew (2016), Irma and Maria (2017), Dorian (2019) and Melissa (2025). **France is another major actor through its permanent presence**: the French Armed Forces in the Antilles (FAA), based in Martinique, have naval and land assets as well as helicopters, while relying on the French Armed Forces in French Guiana (FAG) for certain air functions. The **Dutch command**, CZMCARIB, based in Curaçao, also maintains a permanent operational presence. The United Kingdom and Canada, for their part, can contribute through occasional deployments.

B – A HADR system in flux

This relief ecosystem is, however, undergoing change, driven by two concurrent factors: the adaptation of traditional state actors to the effects of climate change, and the shift in US policy since Donald Trump's return to power in 2025.

The adaptation of traditional actors

The climate factor is now more fully integrated into the defence strategies of prepositioned actors. The **United States** was the first to regard climate as a "threat multiplier"; **France** formalised its approach in the 2022 Climate and Defence Strategy; and the **Netherlands** has incorporated disaster management into the operational mandate of its Caribbean forces. Capability adaptations favour **multi-role assets**. For the FAA, the BSAOM *Dumont d'Urville* illustrates the value of a vessel capable of transporting and landing aid in an archipelagic environment. The Dutch forces have, in particular, HNLMS *Pelikaan* and drone surveillance capabilities.

Finally, this adaptation rests on an evolution in operational preparedness. Exercise Caraïbes, conducted by the FAA, has become **an important regional meeting for civil-military interoperability**. The 2022 edition brought together nearly 2,500 participants from five nations. The 2024 and 2026

editions benefited from the contribution of the French Navy's *Jeanne d'Arc* mission, whose projected amphibious assets included an amphibious helicopter carrier (PHA).The creation of the **Caribbean Academy** in 2025, with a first session in 2026, extends this momentum of training, experience-sharing and defence diplomacy.

The effects of Trump 2.0

Donald Trump's second term marks a major shift in the Caribbean geopolitics of emergency. While reaffirming the region as an area of priority strategic interest, centred on sovereignty, the fight against illegal immigration and drug trafficking, Washington is now sidelining climate issues. Withdrawal from the Paris Agreement, the termination of some federal climate programmes and staff cuts at the *National Oceanic and Atmospheric Administration* (NOAA) **have been accompanied by a challenge to regional scientific cooperation**, notably through the suspension of the sharing of certain satellite data used to monitor Atlantic hurricanes.

This pattern of disengagement also extends to US international aid policy. The dismantling of the *United States Agency for International Development* (USAID) in 2025 has resulted in a contraction of the US international assistance budget. **For the Caribbean, this contraction is even more significant because USAID operated across the entire disaster management cycle**: awareness-raising, warning systems, prepositioning of relief stocks, assessment teams and funding for regional organisations. In 2020, for instance, the agency granted USD 4.5 million to CDEMA to strengthen regional disaster preparedness capacity, before funding new telecommunications equipment in 2023. This disengagement is changing the partnership landscape and contributes to a reshaping of the Caribbean geopolitics of emergency.

III. HADR TESTED BY CARIBBEAN GEOPOLITICAL SHIFTS

A – A redistribution of roles at the regional level

Cuba and Venezuela: two weakened models of humanitarian diplomacy

For several decades, Cuba has been a major HADR actor in the Caribbean through its medical diplomacy and its health brigades, notably the Henry Reeve contingent, established in 2005[13].

[13] Its most emblematic action took place in Dominica after Hurricane Maria (2017), with the dispatch of a medical brigade as reinforcement, followed by the exceptional deployment of the patrol vessel *Río Jatibonico*, carrying 300 tonnes of humanitarian aid.

However, **the economic and energy crisis and US pressure** on Cuban health cooperation, particularly over visas, are weakening this long-standing model.

Since the early 2000s, **Venezuela** has developed an **external influence strategy based on oil rents and expressed through particularly active HADR diplomacy**, which has regularly involved military assets[14]. Today, economic collapse and the US military intervention of January 2026 have considerably reduced the regime's capacity for external action: like Cuba, Venezuela has gradually become a **major recipient of international aid** itself, as illustrated by the double earthquake of 24 June 2026[15].

Brazil and Colombia: the gradual assertion of Latin American ambitions

Since the 2000s, **Brazil** has aspired to establish itself as the **voice of the "Global South"**, but the Caribbean remains a secondary area, Haiti excepted[16]. Lula's return to power in 2023 has been accompanied by a **revival of this ambition**, illustrated by the purchase from the *Royal Navy* of three *Round Table*-class amphibious vessels. These give the *Marinha do Brasil* **one of the largest HADR projection capabilities in Latin America**. They have not, however, yet been deployed in recent hurricane disasters in the Caribbean.

By contrast, **Colombia** has engaged more directly in the region through **relief operations involving air and naval assets** bound for Cuba and Haiti[17]. In 2021, Bogotá created the *Brigada de Rescate e Intervención en Atención de Desastres* (BRIAD), a specialised unit of nearly 950 military personnel intended for both domestic and overseas operations. Colombia thus now appears to be the **Latin American partner that has most clearly institutionalised HADR as an instrument of foreign policy and regional cooperation**.

The rise of Caribbean states

Some Caribbean armed forces have also integrated climate change and HADR operations into their organisation and capability development. The **Dominican Republic** devotes an entire chapter of its first Defence White Paper, published in 2022, to this issue, and has created the *Cuerpo Especializado de Mitigación a Emergencias y Desastres* (CEMED), a permanent joint unit specifically responsible for

[14] In 2015, after Hurricane Erika, a C-130 Hercules aircraft and the patrol vessel *Yekuana* of the Fuerzas Armadas Nacionales Bolivarianas (FANB) delivered more than 2,000 tonnes of aid to Dominica. In 2017, the FANB deployed another C-130 to help evacuate the 2,000 inhabitants of Barbuda threatened by Hurricane Irma.
[15] In particular, France deployed 85 rescue workers and delivered 44 tonnes of humanitarian aid, part of it aboard the BSAOM *Dumont d'Urville*.
[16] After the 2010 earthquake and Hurricane Matthew in 2016, Brasília mobilised substantial naval and air assets to bring relief to Port-au-Prince.
[17] In 2017, during Hurricane Irma, a Boeing 727-200 *Vulcano* of the Fuerza Aérea Colombiana (FAC) carried 15 tonnes of emergency humanitarian aid to Cuba. In 2024, Colombia sent a C-130 Hercules loaded with relief supplies to Cuba after Hurricanes Oscar and Rafael. In 2025, after Hurricane Melissa, the offshore patrol vessel *Victoria* of the Armada de la República de Colombia (ARC) delivered 244 tonnes of humanitarian cargo to Santiago de Cuba, while a FAC Boeing 737-400 delivered 14 tonnes of equipment to Haiti.

natural disaster prevention and response. The ***Jamaica Defence Force*** (JDF) is following a comparable path. In 2024, it organised Exercise *Event Horizon*, which brought together naval and air components and coastguards from eleven nations around a hurricane response scenario in the Caribbean.

B – Humanitarian emergencies: a new arena of influence for extra-regional actors

Alongside the rise of regional actors, **Caribbean HADR is attracting extra-regional newcomers** that use humanitarian assistance as a **new instrument of presence and influence in the Caribbean** (de Guglielmo Weber and Duffau, 2024).

China: a new humanitarian power in the Caribbean?

Although it has so far only very rarely conducted genuine HADR operations in the Caribbean in the wake of hurricanes, the **People's Republic of China** (PRC) has nevertheless strengthened its presence through **hospital ship tours** by the People's Liberation Army, **in-kind and financial donations** and **occasional support to civil protection agencies**. The **calls of the hospital ship *Silk Road Ark*** in Jamaica in late 2025, shortly after Hurricane Melissa, thus enabled the PRC to showcase its health assistance at the very moment the United States was deploying its carrier strike group as part of its counternarcotics campaign. China's strategy is part of a **broader policy of economic development and diplomatic competition with Taiwan**. The operational reach of this influence strategy nevertheless remains limited by distance and by China's still weak integration into regional mechanisms such as CDEMA.

C – A rapidly diversifying range of new actors

A **growing number of extra-regional actors are now moving into the Caribbean humanitarian space**, reflecting the emergence of genuine **geopolitics of emergency**.

India appears, in this field, to be the most ambitious newcomer. After providing aid to the Bahamas (2019) and Saint Vincent and the Grenadines (2024), it deployed a C-17 military transport aircraft carrying humanitarian supplies and a mobile hospital to Jamaica and Cuba after Hurricane Melissa in 2025. This open reliance on military assets, combined with a strengthened India–CARICOM dialogue, reflects **New Delhi's desire to establish itself as a credible partner in Caribbean HADR**.

The **Gulf monarchies** are more recent actors, for which humanitarian aid complements a broader strategy of **economic diversification and international assertiveness**. In 2024, for instance, after Hurricane Beryl, Saudi Arabia donated 21 humanitarian containers to Grenada. In 2025, in

coordination with CDEMA, the *Emirates Development Agency* (EDA) also sent basic necessities and materials for building shelters to Jamaica after Melissa.

Taiwan concentrates its aid on the four Caribbean states that recognise Taipei[18]. Donations of food, equipment and funds after disasters help to preserve its partnerships in the context of its **rivalry with Beijing**

IV. STRATEGIC DIRECTIONS AND OPERATIONAL RECOMMENDATIONS FOR THE FRENCH ARMED FORCES

Against a backdrop of shifting regional geopolitical balances, the FAA's HADR activities are a **major vehicle for France's strategic presence in the Caribbean**. France has distinctive assets in this field. Its territorial presence gives it detailed knowledge of the Caribbean environment, reinforced by a dense regional diplomatic network, while its armed forces have proven experience in disaster management.

Building on the Climate and Defence Strategy (2022), the National Strategic Review (2025) and the Military Programming Law (LPM) updated in 2026, **the following recommendations aim to consolidate the momentum already initiated, around two complementary strands: strengthening regional cooperation and continuing the FAA's adaptation to the effects of climate change**.

A – Anchoring HADR as a central pillar of French regional cooperation

Deepening HADR cooperation with the Netherlands

- Strengthen the complementarity between French projection capabilities and Dutch surveillance assets[19], notably through joint exercises[20].
- Draw on the Multi-National Caribbean Coordination Cell (MN3C) to better coordinate prepositioned European military assets and facilitate their integration with regional civilian mechanisms.

Building a close-knit network of regional military partners

- Establish Colombia as a priority partner for HADR cooperation, complementing the cooperation already under way in the fight against drug trafficking.

[18] Haiti, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines.
[19] Notably the Dash-8 aircraft and MQ-9 Reapers deployed in Curaçao.
[20] For example, the cross-participation of the FAA in the Dutch Exercise Calm Horizon 2025 and of CZMCARIB in Exercise Caraïbes.

- Deepen relations with Caribbean partners (the Dominican Republic and Jamaica) through exchanges of expertise and cross-participation in regional exercises.

Sustaining Exercise Caraïbes and the Caribbean Academy as regional reference frameworks for HADR

- Consolidate these two complementary instruments for operational interoperability and the training of regional partners.
- Consider the occasional participation of assets projected from mainland France, such as a PHA, A400M aircraft or other transport and support capabilities, in order to test reinforcement chains and strengthen French influence in the region.

Keeping CDEMA at the centre of France's HADR cooperation strategy

- Make full use of the June 2026 FAA–CDEMA agreement to develop joint preparedness, training, information sharing and lessons learned.
- Deepen operational relations with the *Regional Security System* (RSS), which has air assets in the form of the two C-26A aircraft of its *Air Wing*.

B – Continuing the FAA's adaptation to climate change

Increasing the FAA's air reception and projection capabilities

- Guarantee the availability of reinforcement air assets during the hurricane season and continue projection exercises such as Balbuzard.
- Increase the reception capacity of airfields in the Antilles, in particular the military zone of Guadeloupe's airport[21], to facilitate the arrival of reinforcements and consolidate a crisis air staging point with a regional role.

Developing the FAA's autonomous amphibious projection capability

- Complement the planned arrival of an EDA-S by examining the merits of a BATRAL-type or equivalent amphibious capability, to increase the FAA's endurance, reach and carrying capacity.
- Consider, as a complement or an alternative, the seasonal chartering of civilian transport vessels.

Accelerating the integration of drones within the FAA in support of HADR knowledge, anticipation and action

[21] Home to PIRAC's regional humanitarian warehouse and the Sécurité civile's stocks.

- Develop drone surveillance capabilities for damage assessment, reconnaissance of affected areas and the prioritisation of relief, while capitalising on their dual-use value for counternarcotics operations.
- At the same time, strengthen personnel training in order to build a sufficient pool of operators.

Strengthening the resilience of the military presence in the Antilles

- Accelerate the adaptation of military infrastructure exposed to climate risks, notably the Fort-de-France naval base and the State Aviation Hub (PAE) at Le Lamentin.
- Prioritise the protection of sensitive installations, communication networks and port infrastructure in order to ensure the continuity of missions after a hurricane.

Creating a "climate-security" analysis and anticipation cell within the FAA

- Establish a body combining military expertise, Météo-France and regional scientific partners to monitor the long-term effects of changing hurricane risk on the FAA's missions and capabilities.
- Extend this monitoring to the regional security effects of climate change, in order to strengthen the FAA's expertise and influence in climate security (droughts, floods, etc.)

Annexe 1. Map 1 : Armed Forces and HADR Institutions in the Insular Caribbean

Armed Forces and HADR Institutions in the Insular Caribbean

Armed forces and internal security forces

60,000 — Armed forces

690 — Internal security forces*

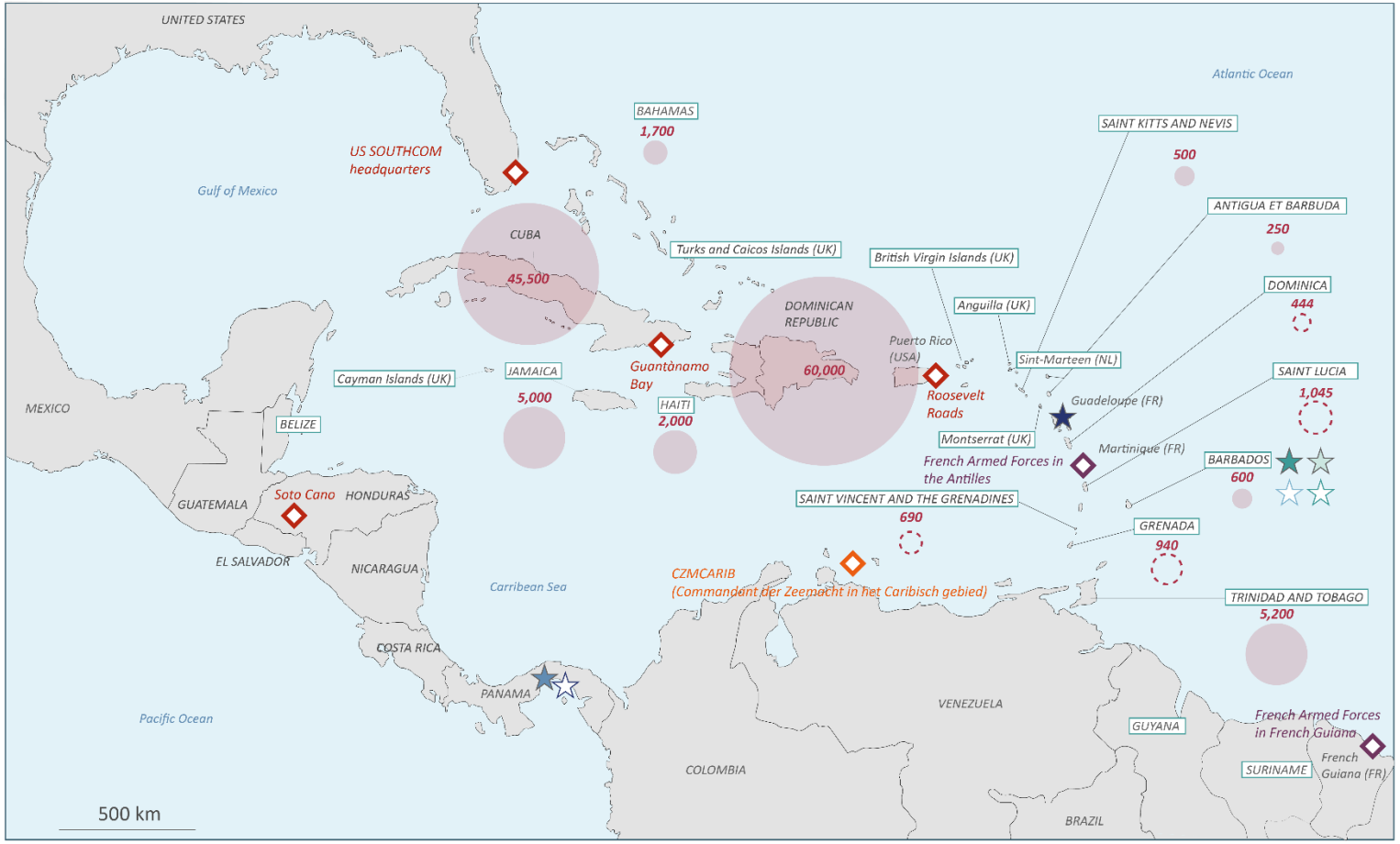
Dominica, Grenada, Saint Lucia, and Saint Vincent and the Grenadines have no armed forces, only police forces.

Main Non-Caribbean Military Bases and Command Structures

United States | France | Netherlands

Main institutions and organizations involved in disaster management (or in HADR)

- CDEMA Headquarters - *Carribean Disaster Emergency Management Agency*
- BELIZE — CDEMA Participating States and Territories
- Regional Security System Headquarters
- French Red Cross: Regional Intervention Platform for the Americas and the Caribbean (PIRAC)
- OCHA Regional Office for Latin America and the Caribbean (ROLAC)
- World Food Programme office
- The Delegation of the European Union to Barbados, the Eastern Caribbean States, the OECS and CARICOM/CARIFORUM
- DG ECHO Regional Office for Latin America and the Caribbean



Sources: CDEMA; CARICOM; Regional Security System; IISS - *The Military Balance 2026*

Annexe 2. Map 2 : Category 5 hurricanes and HADR operations in the insular Caribbean, 2017–2025

Category 5 Hurricanes and HADR (Humanitarian Assistance and Disaster Relief) Operations in the Insular Caribbean, 2017-2025

Hurricane classification on the Saffir-Simpson scale

- Tropical storm - 63 to 118 km/h
- CATEGORY 1 – 119 to 153 km/h
- CATEGORY 2 – 154 to 177 km/h
- CATEGORY 3 – 178 to 208 km/h
- CATEGORY 4 – 209 to 251 km/h
- CATEGORY 5 – 252 km/h or more
- *IRMA (2017)* — Category 5 hurricane on the Caribbean islands that prompted a HADR response

States that have deployed military assets as part of HADR operations

Latin America
- Colombia
- Cuba
- Jamaica
- Dominican Rep.
- Trinidad and Tobago
- Venezuela

North America
- Canada
- United States

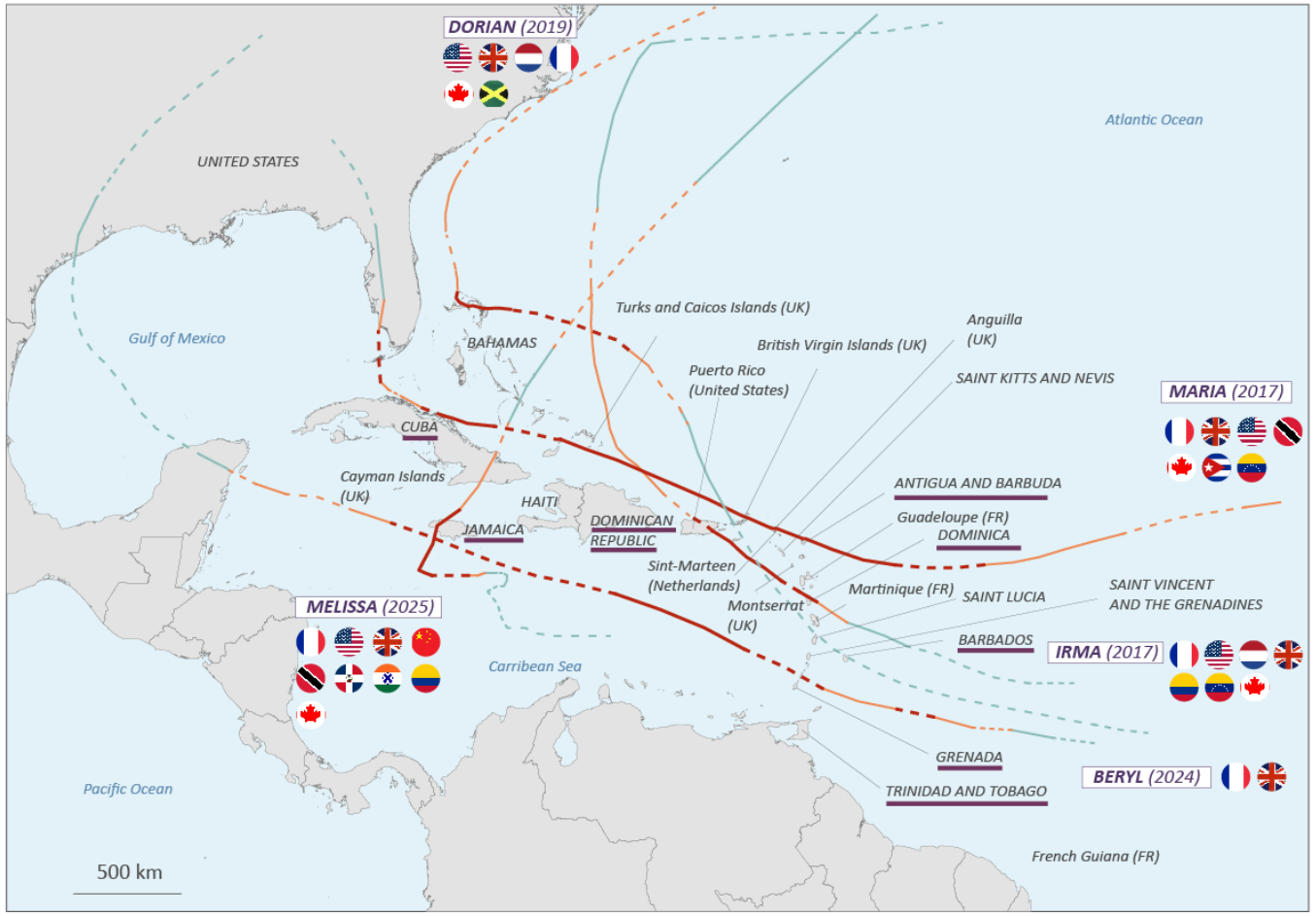
Asia
- China
- India

Europe
- France
- Netherlands
- United Kingdom

Medical diplomacy

CUBA — Visits carried out by the Harmonious Mission Medical Team of the People's Liberation Army of China

2011: Cuba, Jamaica, Trinidad and Tobago; 2015: Barbados, Grenada;
2018: Grenada, Dominica, Antigua and Barbuda, Dominican Republic; 2025: Jamaica (Kingston and Falmouth), Barbados



Sources: National Oceanic and Atmospheric Administration; United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

ANALYSIS OF SECURITY AND DEFENCE ISSUES RELATED TO CLIMATE CHANGE

PUBLICATIONS | « SUR LE FRONT CLIMATIQUE » PODCAST | EVENTS

OBSERVATOIRE Défense & Climat

www.defenseclimat.fr/en