Initial Biennial Update Report



COMMONWEALTH OF
Dominica

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Initial Biennial Update Report

Commonwealth of
Dominica

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Acronyms

BUR — Biennial Update Report
CDB — Caribbean Development Bank
CBI — Citizen by Investment
CRRP — Climate Resilient Recovery Plan
CREAD — Climate Resilience Execution Agency for Dominica
CSA — Climate-Smart Agriculture
CTF — Clean Technology Fund
DGDC — Dominica Geothermal Development Company
DSWMC — Dominica Solid Waste Management Corporation
EV — Electric Vehicle
GCF — Green Climate Fund
GDP — Gross Domestic Product
GEF — Global Environment Facility
GHG — Greenhouse Gas
GIEP — Geothermal Island Energy Plan
GIS — Geographic Information System
IICA — Inter-American Institute for Cooperation on Agriculture
INDC — Intended Nationally Determined Contribution
IPCC — Intergovernmental Panel on Climate Change
LCCRD — Low Carbon Climate Resilient Development
LED — Low-Emission Development
LEDP — Low-Emission Development Plan
LULUCF — Land Use, Land-Use Change, and Forestry
M&E — Monitoring and Evaluation
MRV — Measurement, reporting and verification
NAMA — Nationally Appropriate Mitigation Action
NDC — Nationally Determined Contribution
NGO — Non-Governmental Organisation
LDN-TSP — Local Development Network-Technical Support Program
PV — Photovoltaic
QA/QC — Quality Assurance/Quality Control
REDD — Reducing Emissions from Deforestation and Forest Degradation
SDG — Sustainable Development Goal
SPCR — Strategic Program for Climate Resilience
SWD — Solid Waste Disposal
TNC — Third National Communication
UNDP — United Nations Development Programme
UNFCCC — United Nations Framework Convention on Climate Change

Foreword



It is with a profound sense of responsibility and national commitment that I present the Commonwealth of Dominica's first Biennial Update Report (BUR). This publication marks a significant milestone in our climate action journey and demonstrates Dominica's steadfast adherence to the principles of the Paris Agreement, particularly our commitment to enhanced transparency and accountability in the global response to climate change.

As a Small Island Developing State on the frontlines of the climate crisis, Dominica acutely understands the urgency of decisive, ambitious, and measurable climate action. This report stands as a testament to that resolve. It provides a comprehensive and transparent account of our national greenhouse gas emissions, outlines the progress made toward achieving our Nationally Determined Contribution, and clearly identifies the support required to strengthen our adaptive capacity and resilience.

The path articulated within this Biennial Update Report is not one of compliance alone, but one grounded in conviction. It reflects our national aspiration to become the world's first climate-resilient nation—an aspiration shaped by the severe impacts of Hurricanes Erika and Maria and sustained by the resilience, determination, and unity of the Dominican people. This BUR is therefore more than a reporting instrument; it is a strategic tool to inform policy, mobilise partnerships, and ensure that our climate actions are robust, verifiable, and aligned with sustainable development priorities.

I extend sincere appreciation to the national technical teams, our international partners, and all stakeholders whose collaboration, expertise, and dedication made this rigorous reporting exercise possible. Their contributions reinforce the importance of collective action in addressing a challenge that transcends borders.

As we move forward, this Biennial Update Report will serve as a vital reference and guiding framework, ensuring that Dominica's transition toward resilience and low-emission development remains transparent, data-driven, and effective for the benefit of present and future generations.

Honourable Cozier P. Fredrick
Minister for Environment, Rural Modernisation,
Kalinago Upliftment and Constituency Empowerment
Commonwealth of Dominica

December 2025

Executive Summary

The Commonwealth of Dominica's Initial Biennial Update Report (BUR1) to the United Nations Framework Convention on Climate Change (UNFCCC) outlines the country's progress in climate action, greenhouse gas (GHG) emissions reporting, and the implementation of mitigation strategies. This report represents a critical milestone in Dominica's commitment to the Enhanced Transparency Framework under the Paris Agreement and reaffirms its ambition to become the world's first climate-resilient nation.

Dominica is a Small Island Developing State (SIDS) in the Eastern Caribbean, highly vulnerable to the impacts of climate change due to its geographic location in the hurricane belt and its mountainous terrain. With a population of approximately 70,000, Dominica's economy is largely dependent on climate-sensitive sectors such as agriculture, tourism, and fisheries. The devastation caused by Hurricane Maria in 2017, which led to damages exceeding 226% of GDP[1], illustrates the island's acute exposure to climate-related hazards.

Dominica has made significant strides in institutionalising climate action. Key policies include the Climate Resilience and Recovery Plan (CRRP) 2020–30[2], the National Resilience Development Strategy (NRDS) 2030[3], and the Low-Carbon Climate-Resilient Development Strategy (2012–20)[4]. These frameworks are supported by dedicated institutions and multi-sectoral coordination bodies, although challenges remain in legislative implementation and inter-agency coordination following the disbandment of Climate Resilience Execution Agency for Dominica (CREAD).

The country continues to build institutional resilience and explore innovative solutions to climate challenges. Continued international cooperation and support will be essential in helping Dominica meet its climate goals, protect its rich natural heritage, and ensure sustainable development for future generations.

The national GHG inventory[5] was developed following the 2006 IPCC Guidelines[6] and includes data for the years 2018 to 2022. Dominica's total emissions remain modest on a global scale, with the energy sector being the largest emitter, primarily from fuel combustion in transportation and energy generation. However, the Land Use, Land Use Change and Forestry (LULUCF) sector consistently demonstrates strong carbon sequestration, reaffirming the importance of forest conservation. Waste sector emissions are minor but gradually increasing, suggesting opportunities for targeted mitigation.

Dominica has outlined a range of mitigation policies aligned with its Nationally Determined Contribution[7] (NDC) and Low-Emission Development Strategy (LEDS)[8]. These

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[1] https://www.gfdrr.org/sites/default/files/publication/dominica-pdna-maria.pdf

[2] https://odm.gov.dm/wp-content/uploads/2022/02/CRRP-Final-042020.pdf

[3] https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/Dominica%202030The%20National%20Resilience%20Development%20Strategy.pdf

[4] https://unfccc.int/files/cooperation_support/nama/application/pdf/dominica_low_carbon_climate_resilient_strategy__%28finale%29.pdf

[5] Dominica's National Greenhouse Gas (GHG) Inventory tracks emissions from key sectors like Energy, Transport, Waste, and Land Use (LULUCF), aiming for carbon neutrality by 2030 via 100% renewables, with major efforts focusing on building capacity for better data collection, especially in agriculture, and using tools like GIS for monitoring, with LULUCF often making the country a net carbon sink. Key reports include National Communications (INC, SNC) submitted to the UNFCCC, detailing inventories, vulnerability, and mitigation strategies.

[6] https://www.ipcc-nggip.iges.or.jp/public/2006gl/

[7] Dominica's Nationally Determined Contribution (NDC) is its climate plan under the Paris Agreement, updated in 2022, aiming to be the world's first climate-resilient nation by cutting greenhouse gas (GHG) emissions 35% by 2025 and 45% by 2030 (below 2014 levels) through renewable energy (geothermal, solar, biomass), forest conservation, and enhanced carbon sequestration, while also building resilience across sectors like energy,

include the development of geothermal energy, energy efficiency initiatives, and the promotion of renewable energy. Progress has been made in several sectors, with ongoing work to implement and scale nationally appropriate mitigation actions (NAMAs) and REDD+ strategies. Despite financial and technical constraints, the country continues to pursue ambitious emissions reduction goals while seeking to strengthen linkages with sustainable development objectives.

The implementation of climate action in Dominica is constrained by limited financial resources and technical capacity. The BUR1 highlights the need for sustained international support in the form of climate finance, capacity building, and technology transfer to advance its mitigation and adaptation agendas. The country continues to strengthen institutional frameworks and seeks to establish systems for robust measurement, reporting, and verification (MRV).

transport, and agriculture.

[8] Dominica's Low-Emission Development Strategy (LEDS), often called its Low-Carbon Climate-Resilient Development Strategy, aims to decouple growth from emissions by leveraging its geothermal & natural resources, building climate resilience post-hurricanes (like Maria), and reducing reliance on fossil fuels, focusing on 100% renewable energy, a National Financing Vehicle for green investments, and becoming the world's first climate-resilient nation by integrating mitigation & adaptation into its core development

1. National Circumstances

1. National Circumstances

The Commonwealth of Dominica is located between 15°12′ and 15°39′ North Latitude and between 61°14′ and 61°29′ West Longitude. The landmass measures 48 km along its north-south axis and 24 km from east-west at the widest point of the island. The land area is 750.6 km2, with 153 km of coastline, adjoining a 715 km2 coastal shelf. It is the youngest island in the Lesser Antilles, still being formed by geothermal-volcanic activity, as evidenced by the world's second-largest hot spring, Boiling Lake



Map of Caribbean islands positioning the Commonwealth of Dominica and its central location within the Caribbean volcanic arc.
Source: https://www.google.co.uk/search?q=maps+of+dominica&biw=1264&bih=719&tbm=isch&tbo=u&source=univ&sa=X&ei=jI0AVeHBDIH9UoDbgtgH&ved=0CCIQsAQ

Dominica has a very high vulnerability index, ranking globally as extremely susceptible to climate impacts, especially hurricanes and landslides, due to its Small Island Developing State (SIDS) status, mountainous terrain, and reliance on climate-sensitive sectors like tourism and fisheries. Indices like the Climate and Ocean Risk Vulnerability Index[1] (CORVI) and ND-GAIN[2] confirm high risks from extreme weather, rising sea levels, and coastal erosion, leading the nation to aim to become the world's first climate-resilient country through extensive national strategies.

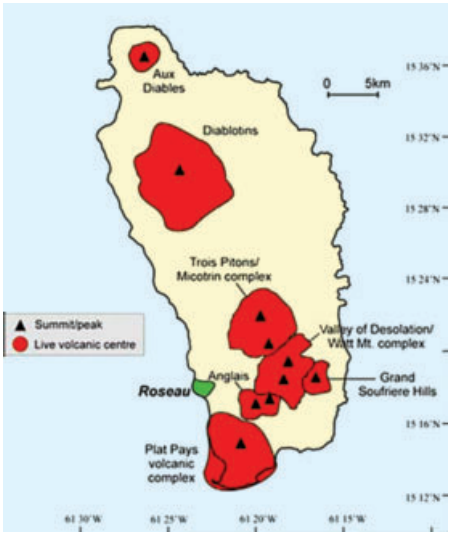
The 2017 hurricane season, with Hurricane Maria alone causing damages amounting to over USD 1.3 billion (226% of GDP), underscored the country's vulnerability to such extreme events, along with associated hazards like storm surges, coastal erosion, and coral bleaching that strain its economic and cultural infrastructure.

Geographic Profile

The island is almost entirely composed of andesitic-dacitic volcanic rocks from ten volcanic centres of mainly Pleistocene age (Joseph et al., 2011). Historically, activity on the island has been limited to intense and prolonged fumarolic emanations (Samper et al., 2008). The oldest formations are andesitic and basalt andesite breccias and lavas in the eastern and north-eastern part of the island (Halama et al., 2006). Overlying the rocks of the basal complex is a

[1] https://ocean-climate.org/en/the-climate-and-ocean-risk-vulnerability-index-corvi/
[2] https://gain.nd.edu/our-work/country-index/

discontinuous formation of shoreline conglomerates with coral and algal limestone lenses of Pleistocene age (Rad et al., 2013). Typically, the weathering profile consists of a highly organic topsoil ("A" soil horizon), of variable depth, above 15-150 cm of mineral soil ("B" soil horizon) (Reading, 1991). Below this lies a layer of saprolite ("C" soil horizon) which grades into progressively less weathered parent material with depth (Reading, 1991).



Areas of live volcanic activity of the Commonwealth of Dominica.
Source: https://www.thedominican.net/articles/auxdiables.htm

The island is very rugged and the most mountainous of the Lesser Antilles as a result of youthful volcanic relief (Roobol et al., 1983), mid Pleistocene uplift, rapid erosion primarily by landslides (Reading, 1991), and high drainage densities (Rao, 1996). Slopes are steep, frequently exceeding 50o, especially in the southern part of the island with gentle gradients being largely restricted to structural hollows and narrow interfluves (Goldsmith et al., 2010).

Erosion is problematic in Dominica's interior highlands due to a combination of high rainfall, steep slopes, rapid uplift in the Pleistocene and an abundance of poorly consolidated pyroclastic deposits (Rad et al., 2006). However, Rouse (1990) highlighted that the clays of Dominica exhibit unusual geotechnical and hydrological properties due to high water retention capacity, and as emphasised by Rao (1996), only rainfall of exceptionally prolonged high intensity can elevate pore water pressures and induce landslides.



Figure 1: Map of Dominica

Dominica's tropical climate, marked by distinct dry and wet seasons, is influenced by trade wind systems, the North Atlantic Subtropical High (NAH), and shifts in the inter-tropical convergence zone. During the North American winter, the NAH brings dry conditions with strong trade winds, while summer increases precipitation and humidity, elevating the likelihood of hurricanes. The island's rugged topography and steep mountainous heightens flood hazards during heavy rainfall, resulting in rapid runoff and increasing the risks of flash floods and landslides in vulnerable areas. Landslides are a frequent occurrence, particularly in areas with compromised soil stability and loss of vegetation cover, often leading to significant damage to infrastructure, agriculture, and human settlements. Additional climate variability from the El Niño Southern Oscillation (ENSO) further influences rainfall patterns and hurricane activity, compounding risks to Dominica's key sectors. These conditions underscore the urgent need for adaptive strategies to mitigate the impacts of climate change on Dominica's socioeconomic stability and environmental resilience.

Dominica's protected areas network can be cited as a major achievement, with 25% of the country's forest land legally protected, either under forest reserves or national parks[3]. All three of the country's national parks have management plans and continuous monitoring activities. The Morne Trois Pitons National Park was declared a UNESCO World Heritage site in 1998. In addition, there has been an increase in the number of sites that have been come under the guise of a protected area though not legislated as such (e.g. sections of a river, waterfall, old plantation, historic site). The Government has begun the process of establishing biosphere reserves in tandem with UNESCO's Man and the Biosphere program. In the marine environment, the Soufriere-Scottshead Marine Reserve was designated a marine reserve in 1998. This world class scuba diving destination and highly favoured traditional fishing area is protected to avoid user conflicts between the traditional fishermen and the new water sports sector through a community-based approach.

Protection comes from National Parks (like Morne Trois Pitons, a UNESCO site) and Forest Reserves (like the Northern and Central Forest Reserves) which are protected under the Forests Ordinance of 1958 and newer policies like the 2022 National Forest Policy.

Dominica's Biodiversity accounts for 48% of local food supplies and comes from wild meat, fish, and root crops amongst others.

Key inventories include 188 bird species (with endemic parrots like the Sisserou), unique mammals (Agouti, Manicou), endemic amphibians (Mountain Chicken), diverse invertebrates, vibrant coral reefs, year-round sperm whale populations, sea turtles, and rich fish/crustacean life, all supported by mangroves and seagrass beds, though deforestation and climate change pose threat.

Cumulative hazard

Dominica faces significant and frequent cumulative hazards, primarily a dangerous combination of meteorological and geophysical events whose impacts are amplified by the island's geography and existing vulnerabilities. The simultaneous occurrence of these hazards, especially during events like hurricanes, creates a complex risk environment.

The impacts of these natural hazards are exacerbated by socio-economic and physical vulnerabilities. Nearly 90% of the population resides in settlements along the coastal fringe and in river valleys, areas most susceptible to flooding, storm surge, and landslides. Past disasters have repeatedly damaged critical infrastructure, including transportation networks, housing, and utilities, many of which were not built to be climate-resilient. The economy,

[3] https://www.cbd.int/countries/profile?country=dm

heavily reliant on agriculture and eco-tourism, is vulnerable to damage from natural events, leading to significant GDP losses and hindering long-term recovery. In response to these persistent threats, Dominica has committed to becoming the world's first climate-resilient nation, a goal that involves comprehensive disaster risk management and resilient reconstruction efforts outlined in its National Resilience Development Strategy 2030 (NRDS).

The island's steep terrain and intense rainfall accelerate soil erosion, affecting 40% of Dominica's agricultural soils and causing annual crop losses estimated at 20–40%[4]. This degradation undermines agricultural productivity, threatening food security and rural livelihoods, leaving farmers increasingly vulnerable to future shocks. Coastal erosion on the other hand presents another significant challenge. Dominica NDC (2020) estimate that 20% of island's coastline a low-lying communities and infrastructure are exposed to rising sea levels and storm surges. According to FAO Fisheries and Coastal Report 2021[5], the long-term degradation of critical ecosystems, such as mangroves, coral reefs, and sea grass beds weakens natural defences against extreme weather reducing biodiversity, and negatively impacting fisheries and tourism.

The cumulative impacts of these hazards have far-reaching implications for Dominica's long-term adaptive capacity. Recurring disasters place a heavy strain on the national economy by disrupting critical sectors, increasing public debt, and reducing the fiscal space available for resilience-building investments[6]. Community resilience is further eroded as frequent shocks deplete resources, displace populations, and weaken local capacities to rebuild, particularly among marginalised groups such as women and the Kalinago community[7]. Additionally, infrastructure recovery efforts often redirect resources away from long-term adaptation measures, delaying necessary investments in climate-resilient designs that could mitigate future risks.

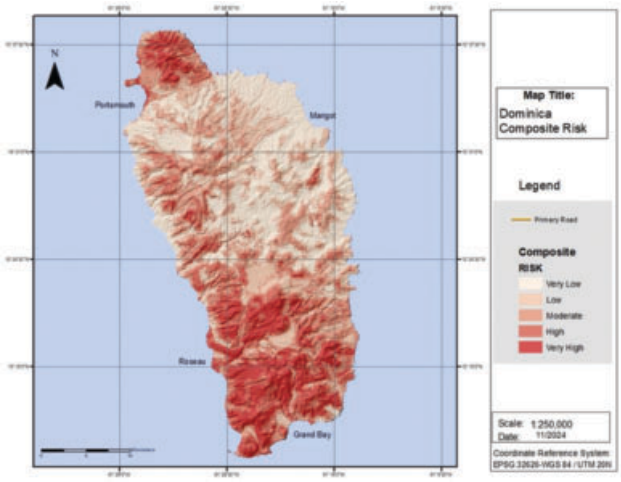


Figure 2: Cumulative risk map of Dominica

To address these compounded hazards effectively, Dominica must prioritise the development of climate-resilient infrastructure, such as incorporating resilient designs into public buildings, roads, and critical facilities. Sustainable land and coastal management practices, including soil conservation, reforestation, and the restoration of coral reefs ecosystems are essential to

[4] Government of the Commonwealth of Dominica. (2020). *Third National Communication to the United Nations Framework Convention on Climate Change.* Roseau: Ministry of Environment, Rural Modernisation and Kalinago Upliftment.
[5] https://openknowledge.fao.org/server/api/core/bitstreams/2be6c2fa-07b1-429d-91c5-80d3d1af46a6/content
[6] Commonwealth of Dominica (2020). Dominica Climate Resilience and Recovery Plan 2020-2030
[7] Government of the Commonwealth of Dominica. (2020). *Third National Communication to the United Nations Framework Convention on Climate Change.* Roseau: Ministry of Environment, Rural Modernisation and Kalinago Upliftment

reducing vulnerabilities. Diversifying the economy through renewable energy development, digital transformation, and value-added industries can reduce reliance on climate-sensitive sectors and foster economic stability. Moreover, empowering communities through participatory adaptation planning and providing tools and resources to rebuild sustainably are vital to strengthening resilience. It is only by addressing these cumulative hazards with robust, long-term strategies, Dominica can enhance its adaptive capacity, safeguard its socio-economic stability, and set an example for other Small Island Developing States facing similar challenges.

Socio-Economic Context

Dominica's socio-economic landscape is defined by its small population, rural dependence, and reliance on natural resources, making it particularly vulnerable to climate change and economic shocks. With a population of approximately 70,000, a significant proportion resides in rural areas, including the Kalinago Territory, home to the indigenous Kalinago people. This group is especially vulnerable due to their reliance on subsistence agriculture and fishing, both of which are highly climate-sensitive[8] . Rural areas, in general, face limited access to income-generating opportunities and essential services, contributing to a national poverty rate of approximately 28%[9]. These disparities are exacerbated by income inequality and the concentration of economic activity in urban centres like Roseau[10]. Key reports, like the 2008/09 Country Poverty Assessment (CPA) and recent Enhanced Country Poverty Assessment (eCPA) efforts via the OECS/CDB, aim to provide detailed insights for targeted interventions, focusing on education, healthcare, and sustainable livelihoods, with significant impacts seen on vulnerable farmers and youth.

The demographic breakdown of the country is characterised by a diverse mix of ethnic groups, predominantly Afro-Caribbean, with a smaller percentage of mixed, East Indian, and European descent.

The main language spoken is English, with a significant number of residents also speaking Creole (Kwéyòl), which reflects the island's Francophone heritage. The population is primarily Christian, with Roman Catholicism being the largest denomination, followed by various Protestant faiths.

Additionally, Dominica is known for its youthful population, with a median age estimated around 40 years. The country faces challenges such as emigration and the impacts of natural disasters, which can influence demographic trends and economic conditions.

Dominica's economy relies heavily on agriculture, tourism, and financial services (Figure 1), sectors that are highly sensitive to climate variability and external shocks. Agriculture, a key contributor to GDP and rural employment, is frequently disrupted by extreme weather events, such as hurricanes, which cause significant crop losses and damage to infrastructure. Similarly, tourism, a major source of foreign exchange, is vulnerable to seasonal fluctuations and climate-related destruction of coastal infrastructure. The financial services sector is subject to global regulatory changes that can disrupt economic stability[11] (Dominica NDC, 2020). High unemployment rates[12], ranging from 14% to 20%, further compound socio-economic

[8] *Government of the Commonwealth of Dominica. (2020). Third National Communication to the United Nations Framework Convention on Climate Change.* Roseau: Ministry of Environment, Rural Modernisation and Kalinago Upliftment

[9] https://www.unccd.int/sites/default/files/prais-legacy/Dominica/2018/annexes/Dominica%20CPA%202009%20Final%20PPA%20Report.pdf

[10] Commonwealth of Dominica (2020). Dominica Climate Resilience and Recovery Plan 2020-2030

[11] Commonwealth of Dominica (2020). Nationally Determined Contribution Update

[12] Dominica's unemployment rate sits around 13% as of 2024, showing a gradual recovery, but with significant youth underemployment (around 34.7% in 2022) and a large informal sector (over 40%), indicating persistent labour challenges despite overall decreases from earlier years. Recent figures show improvement from peaks, with estimates pointing to roughly 13.04% for 2024, reflecting post-pandemic recovery but ongoing issues with job quality and youth opportunities.

vulnerabilities, disproportionately affecting women and youth. The rural workforce is largely employed in informal sectors like agriculture, construction and fisheries, which lack stability due to climate impacts (World Bank DVRP Report, 2020).

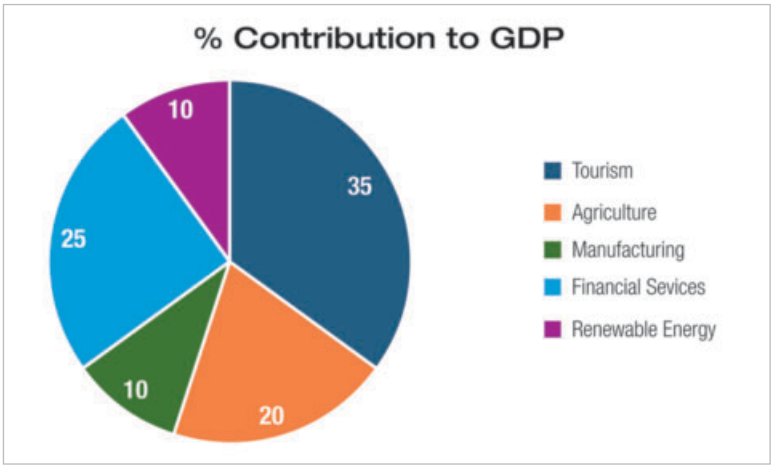


Figure 3: key economic sectors of Dominica

Dominica's GDP was approximately $0.69 billion (USD) in recent data, with estimates for 2023 around $654 million, showing strong recovery with a 4.7% growth, driven by tourism recovery (cruise/air), the new international airport project, and geothermal expansion, with forecasts expecting continued growth. The economy, while resilient, faces challenges like hurricanes, with recent focus on resilience strategies, leveraging Citizenship by Investment (CBI) funds for development.

According to the IMF nominal (current) Gross Domestic Product (GDP) of Dominica is $748.00 million ($748,000,000) as of 2025. The GDP growth rate in 2025 is 4.2%, GDP per Capita in Dominica (with a population of 65,871 people) is $9,944 in 2025, an increase of $619 from $9,325 in 2024; this represents a change of 6.6% in GDP per capita.



Figure 4: Dominica GDP

Efforts to address these challenges are embedded in Dominica's Growth and Social Protection Strategy[13] (GSPS), which focuses on poverty reduction, sustainable economic development, and social protection mechanisms. This strategy prioritises infrastructure resilience, support for small and medium enterprises (SMEs), and diversification of economic activities to reduce dependence on climate-sensitive sectors.

[13] Dominica's Growth and Social Protection Strategy (GSPS) is a core policy framework for inclusive development, blending economic growth with poverty reduction through fiscal discipline, private sector support (transport, energy), and strong social safety nets (health, education). Introduced in 2006, it's updated periodically (e.g., 2014-2018 version) and supported by technical assistance (GSPTAP) to build public sector capacity for delivering services and managing social programs, focusing on resilience in a small-island, post-disaster context.

However, the implementation of these plans has been hindered by fiscal constraints and the need to recover from recurring natural disasters, which often redirect resources from long-term development goals[14,15]. Part of Dominica adaptive effort must be to addressing these socio-economic vulnerabilities. This will require targeted policies that prioritise inclusive growth, job stability, and economic diversification.

Climate Change Institutional Framework

Within the Dominica landscape, there are multiple institutions across various sectors that undertake and perform significant activities related to and aligned to climate change and national resilient building activities. Such institutions are listed accordingly:

Table 1: National institutions for climate change

Agencies
UNFCCC Focal Point
National Direct Access Entities
National Climate Change Committee
GEF Focal Point
National Designated Authority
IPCC Focal Point
National Designated Entity for Technology Development and Transfer
Adaptation Fund Focal Point
Policy Advisory Board
United Nations Development Program (UNDP) Dominica
Ministry of Finance, Economic Development Climate Resilience and Social Security
Ministry of Environment Rural Modernisation Kalinago Upliftment and Constituency Empowerment
Organisation of Eastern Caribbean States (OECS) Environmental Sustainability Division
Caribbean Community Climate Change Centre (CCCCC) Dominica Focal Point
Other Relevant Focal Points

Dominica has developed specific institutional arrangements to meet its obligations to the **United Nations Framework Convention on Climate Change (UNFCCC)**. These arrangements are designed to coordinate climate action across sectors and align local efforts with international climate commitments[16]. The Climate Resilience Act, 2018[17] provides the legal basis for national climate action strategies. The aims of the Climate Resilience Act are to rebuild Dominica as a climate resilient nation which is better able to withstand future hurricanes, earthquakes and other natural disasters with minimal loss of life and minimal damage to infrastructure, property, and livelihoods. The Act was passed following the devastation caused by Hurricane Maria in 2017.

[14] Government of the Commonwealth of Dominica. (2020). Third National Communication to the United Nations Framework Convention on Climate Change. Roseau: Ministry of Environment, Rural Modernisation and Kalinago Upliftment

[15] Commonwealth of Dominica (2020). Dominica Climate Resilience and Recovery Plan 2020-2030

[16] Department of Climate Change, Environment and Conservation: Proposed under the 2020 Climate Change Bill, this department is intended to be responsible for implementing national climate change programs and coordinating the implementation of multilateral environmental agreements (MEAs), including the UNFCCC.

[17] https://climate-laws.org/document/climate-resilience-act-2018_5552

Present Institutional Coordinating Mechanism

Effective coordination among government agencies is essential to implement climate change adaptation strategies and achieve the nation's goals of becoming the world's first climate-resilient country. The complexity of climate change adaptation, which spans across multiple sectors such as agriculture, health, infrastructure, and energy, requires robust coordination mechanisms at both intra-agency and inter-agency levels.

Inter-Agency Coordination

Inter-agency coordination involves collaboration and communication between different government agencies to ensure a unified national approach to climate change adaptation. In Dominica, this is facilitated through both formal and informal mechanisms. For example, within the Ministry of Agriculture, there are established mechanisms to coordinate between departments on issues such as climate-smart agriculture, disaster risk management, and data sharing. The National Climate Change Committee (NCCC) serves as the main body for inter-agency dialogue, enabling various ministries and departments to align their climate actions with national goals. The Climate Resilience Executing Agency of Dominica (CREAD) played a pivotal leadership role ensuring that sectors integrated resilience-building into their operations. With the disbandment of this CREAD, this effort has been weakened. Despite the presence of these formal structures, challenges such as capacity gaps, insufficient data sharing, and inconsistent monitoring and follow-up hinder the full effectiveness of inter-agency coordination. Addressing these gaps is critical for Dominica to advance its climate resilience agenda.

Below is an overview of Dominica's institutional structure and mechanisms in place to meet the obligations to the UNFCCC:

1. **Ministry of Environment, Rural Modernisation, and Kalinago Upliftment**
   Primary Coordinating Body: The Ministry of Environment serves as the central body for climate policy in Dominica and is responsible for the overall coordination of environmental and climate initiatives. This includes overseeing Dominica's Nationally Determined Contributions (NDCs) under the Paris Agreement and aligning local policies with UNFCCC commitments.

   Policy Development: The ministry works to develop and update national climate policies, laws, and frameworks in line with international climate commitments. This includes working on resilience strategies, climate action plans, and renewable energy targets.

2. **National Climate Change Committee (NCCC)**
   Cross-Sectoral Collaboration: The NCCC brings together representatives from various sectors, including agriculture, energy, water resources, and health, to ensure a holistic approach to climate action. This committee enables cross-sectoral dialogue, helping to address climate impacts in all areas of development.

   Policy Advising: The NCCC advises on policy formulation, identifies priority areas for climate action, and ensures that sectoral strategies are aligned with national and UNFCCC goals.

3. **Dominica Meteorological Service**
   Data Collection and Analysis: This service plays a crucial role in providing climate data, weather forecasts, and early warning information, which are essential for building climate resilience and planning adaptation strategies.

   Reporting on Climate Trends: As part of its UNFCCC commitments, Dominica must regularly report on climate conditions, greenhouse gas emissions, and adaptation

progress. The meteorological service provides valuable data for preparing these national communications.

4. **Partnership with Regional Bodies**
   Caribbean Community Climate Change Centre (CCCCC): Dominica collaborates with the CCCCC for technical assistance, capacity building, and accessing climate finance. This regional body assists Caribbean nations in developing climate resilience projects and supports them in meeting UNFCCC requirements.

   Organisation of Eastern Caribbean States (OECS): Dominica participates in OECS initiatives that focus on climate resilience, environmental protection, and sustainable development across member states. The OECS Commission helps facilitate shared climate goals, including joint submissions and funding applications to international bodies.

5. **Non-Governmental Organisations (NGOs) and Civil Society**
   Public Engagement and Community Involvement: NGOs and community organisations play an essential role in climate education, awareness, and grassroots climate action. By engaging local communities, these groups help implement adaptation strategies on the ground and promote environmental stewardship.

   Policy Advocacy: NGOs often advocate for stronger climate action and support the government in securing international funding for climate resilience projects.

6. **Monitoring, Reporting, and Verification (MRV) Systems**
   Emission and Adaptation Monitoring: Dominica has been developing MRV systems to monitor greenhouse gas emissions, adaptation progress, and resilience outcomes. These systems are necessary for transparent reporting to the UNFCCC and fulfilling Dominica's commitments under its NDC.

   Periodic Reporting: Under the UNFCCC, Dominica submits regular reports, such as National Communications (NC) and Biennial Update Reports (BURs), which outline progress in emissions reduction and adaptation efforts.

7. **Efforts Toward Climate Financing**
   Dominica actively seeks financing from global climate funds to support its initiatives. The government's partnership with the GCF, GEF, and other financing bodies is critical to bridging the resource gap and implementing its climate action plans. The ECU and Ministry of Environment manage these funds and oversee their utilisation across priority projects.

Table 2: Institutions involved in climate change actions in Dominica

Institution	Summary of main roles
National Institutions	
Ministry of Environment, Rural Modernisation, and Kalinago Upliftment	Coordinates the setup and delivery of environment-related projects in Dominica, ensuring active engagement from other departments, ministries, the private sector, NGOs, and communities. Oversees the monitoring, reporting, and verification of climate actions, manages the compilation of the greenhouse gas (GHG) inventory, and develops projects to gather and track climate-related data.
Ministry of Finance, Economic Development, Climate Resilience, and Social Security	Supports climate resilience by securing funding for adaptation projects, integrating resilience into economic planning, and coordinating with international partners to enhance the nation's climate adaptation capacity.
Ministry of Agriculture, Fisheries, Blue and Green Economy	Promotes resilience by advancing sustainable agriculture, managing fisheries, and protecting ecosystems to enhance climate adaptation and food security in Dominica.

Institution	Summary of main roles
National Emergency Planning Organisation (NEPO)	NEPO is involved in disaster risk reduction and management, working in coordination with other state institutions to ensure that climate change adaptation is integrated into disaster planning.
Council on Environment, Climate Change and Development	Guides national policy and strategy on environmental protection, climate adaptation, and sustainable development initiatives.
National Climate Change Committee	Instrumental in guiding the development of the National Climate Change Policy and Action Plan. It includes representatives from various ministries, agencies, and NGOs, tasked with coordinating climate change activities
Forestry, Wildlife and Parks Division	Responsible for managing forest reserves and national parks, as well as conserving and protecting the island's wild flora and fauna.
Dominica Meteorological Service	Collects climate-related data and contributes to vulnerability and adaptation assessments.
Energy Conservation Unit	Promote energy efficiency and renewable energy adoption to reduce greenhouse gas emissions and support climate resilience.
DOWASCO	Involved in water resource management and climate resilience measures
Sustainable Development Tribunal	Adjudicates disputes and ensures compliance with environmental laws and policies, supporting climate resilience by enforcing sustainable development practices.
Public-Private Sector Investment Committee	Fosters partnerships and investments in climate-resilient infrastructure and sustainable projects to strengthen national climate adaptation efforts.
Regional Organisation	
Caribbean Community Climate Change Centre (CCCCC)	Provides policy advice, technical support, and capacity-building initiatives to member states including Dominica, aiming to enhance resilience and promote sustainable development in the face of climate challenges.
Caribbean Development Bank (CDB)	Supports climate change adaptation in Dominica and the Caribbean by funding resilient infrastructure, disaster risk reduction, and capacity-building projects to enhance regional climate resilience
Organisation of Eastern Caribbean States (OECS)	Promotes climate resilience across its member states by coordinating policies, mobilising resources, and supporting sustainable development initiatives that address climate adaptation and mitigation challenges.
Partnership Initiative for Sustainable Land Management (PISLM)	Supports climate change adaptation in the Caribbean including Dominica by promoting sustainable land management practices that enhance soil resilience, combat land degradation, and improve ecosystem health.
International Organisations	
Food and Agriculture Organization (FAO)	Supports climate change adaptation in the Caribbean by promoting sustainable agricultural practices, enhancing food security, and building resilience in farming and fisheries sectors against climate impacts.
United National Environmental Program (UNEP)	Advances climate change adaptation by supporting environmental governance, sustainable resource management, and resilience-building initiatives globally and regionally
United Nations Development Program (UNDP)	Supports climate resilience by funding and implementing projects that strengthen sustainable development, disaster preparedness, and adaptive capacity in vulnerable communities locally and regionally

Policy Framework

Since the ratification of the UNFCCC in June 1993[18], Dominica over the years has developed many policy documents that are aligned with its ambition of becoming the first climate-resilient country in the world having recognised the threat of climate change and the necessity for an appropriate and adequate institutional framework that seeks to provide the legal and policy direction needed to integrated climate change into national development planning and processes.

The **Climate Change, Environment and Natural Resource Management Bill (Draft)** is designed to provide an overarching legal framework for addressing climate change, environmental protection, and the sustainable management of natural resources. While the bill has not yet been fully enacted, it has laid the groundwork for more structured and cohesive climate action by aligning various policies under a single legislative framework. The bill has facilitated the incorporation of climate resilience and environmental sustainability into national development plans, enhancing adaptation efforts by promoting ecosystem-based solutions and strengthening disaster risk management strategies.

With regards to mitigation, the bill supports initiatives aimed at reducing greenhouse gas emissions by advancing renewable energy development and forest conservation efforts. However, constraints to its full implementation remain. The legislative process has been slow, and delays in passing the bill have limited the ability to enforce climate-related regulations consistently. Additionally, funding and institutional capacity challenges have hindered the full operationalisation of measures outlined in the bill, such as more robust environmental monitoring and enforcement mechanisms. Despite these hurdles, the bill represents a crucial step forward in formalising Dominica's climate change and environmental protection policies.

The **Climate Resilience and Recovery Plan (CRRP) 2020–30** has made notable strides in positioning Dominica as a leader in climate resilience. The plan integrates climate adaptation and mitigation into key sectors like infrastructure, agriculture, and tourism. Progress includes the development of climate-resilient infrastructure, such as more robust housing and road networks, designed to withstand extreme weather events. In agriculture, the CRRP has promoted climate-smart practices aimed at enhancing food security and reducing vulnerability to climate impacts. Additionally, in tourism, the plan has encouraged eco-tourism initiatives that are sustainable and less prone to environmental damage.

To some extent, the CRRP has also enhanced adaptation efforts by mainstreaming resilience into national development, with a focus on disaster preparedness and ecosystem-based solutions. On the mitigation side, it supports Dominica's transition to renewable energy, particularly geothermal energy, which contributes to both emissions' reduction and energy security. However, challenges remain in the full implementation of the plan. Financial constraints have slowed down the scale and pace of some initiatives, and the recurrence of natural disasters has diverted resources toward recovery, hindering long-term resilience-building projects. Additionally, institutional capacity gaps continue to limit the efficient coordination of cross-sectoral efforts. Despite these challenges, the CRRP has laid a strong foundation for advancing Dominica's goal of becoming the first climate-resilient nation.

The **National Resilience Development Strategy (NRDS) 2030** is a critical framework designed to systematically integrate climate resilience into Dominica's long-term national development

[18] On June 21, 1993, Dominica formally ratified the UNFCCC, demonstrating its early commitment to addressing global climate change. As a Small Island Developing State (SIDS), Dominica recognized the significant threat posed by climate change and its serious ramifications. By ratifying in June 1993, Dominica became one of the early parties to the convention, which established a framework for international cooperation to combat climate change by limiting greenhouse gas emissions.

objectives. The strategy emphasises strengthening critical sectors such as infrastructure, agriculture, and energy to improve the country's adaptive capacity to withstand climate-induced shocks. Implementation progress includes embedding disaster risk reduction (DRR) into national development policies, advancing climate-smart agricultural practices aimed at improving productivity while reducing vulnerability to shifting climate conditions, and accelerating the shift to renewable energy, particularly through the development of geothermal and solar energy projects. These efforts have enhanced adaptation measures by fortifying critical economic sectors and ensuring infrastructural resilience against extreme weather events.

In terms of mitigation, the NRDS contributes to reducing Dominica's greenhouse gas (GHG) emissions through the promotion of renewable energy systems and the preservation of carbon-sequestering ecosystems such as forests. However, the effectiveness of the NRDS has been somewhat constrained by several factors. Financing shortfalls and limited technical capacity have hindered the full execution of key resilience projects, while recurring extreme weather events, such as hurricanes, have forced a reallocation of resources toward immediate recovery efforts. These challenges have slowed the full operationalisation of the strategy's long-term climate resilience goals. Notwithstanding, the NRDS has provided a good policy foundation for enhancing both adaptive capacity and mitigation outcomes across multiple sectors, contributing to Dominica's overarching goal of sustainable, climate-resilient development by 2030.

Dominica has initiated the **National Adaptation Plan (NAP)**, which focuses on integrating climate adaptation into national development planning. The NAP aims to "climate-proof" key sectors such as agriculture, water, infrastructure, and coastal areas by embedding resilience measures to address climate risks. It emphasises institutional integration, ensuring that both public and private sectors include climate considerations in their planning processes. The plan is supported by international funding, such as from the Green Climate Fund (GCF), and focuses on capacity building to strengthen national agencies' abilities to assess vulnerabilities and track progress. While some aspects of the NAP are being implemented, full execution is ongoing, with challenges in financing and coordination remaining.

The **Low Carbon Climate Resilient Development Strategy (LCCRDS)** has made progress in key areas, particularly in the renewable energy sector. Geothermal energy development has been a major step forward that will position Dominica as a leader in the region's shift to clean energy. This geothermal project will not only help reduce the country's dependence on imported fossil fuels but also serves as a critical component of the island's adaptation strategy by improving energy security, which is vital during climate-related disasters.

The strategy has also been integrated into national policies such as the CRRP, ensuring that both low-carbon development and climate adaptation are central to Dominica's long-term vision of becoming climate-resilient. This integration reflects the government's commitment to aligning economic growth with climate resilience, emphasising infrastructure upgrades, sustainable agriculture, and disaster risk management.

Furthermore, Dominica is signatory to 27 Multilateral Environmental Agreements (MEAs) and has recognised the need for specific and localised legislation that addresses the issue of climate change. The Government of Dominica has long recognised that a combination of local, regional, and MEAs is required to provide the institutional framework needed. Therefore, the MOE is currently reviewing the Draft Environmental bill which will formally lead to a "Legally established council on the environment, climate change development" and also to "Establish legal and institutional frameworks for direct access to international climate financing".

Table 3: List of Climate change related policies in Dominica

Year	Policy/Legislation
2020	Third National Communication
2015	Climate Change, Environment and Natural Resource Management Bill (draft)
	National Climate Change Policy and Action Plan *Formerly Climate Change Adaptation Policy, 2001
2011	Low-Carbon Climate-Resilient Development Strategy
2012	Strategic Program for Climate Resilience (SPCR)
2006	Growth and Social Protection Strategy (GSPS)
	National Climate Change Adaptation Policy
2010	Montreal Protocol (Substances that Deplete the Ozone Layer) Regulations
2010	National Strategy for Health
	Sector Strategy, Natural Resources and Energy Sector Plan
2010	Tourism Policy
2010	Environmental and Planning Regulations for Renewable Energy (draft)
	National Resilience Development Strategy
	Climate Resilience and Recovery Plan
2010	Geothermal Development Bill (draft)
	National Energy Policy (draft)
2010	National Integration Water Resources Management Policy (draft)
2009	Dominica Forestry Policy
2009	Disaster Management Plan
2009	National Emergency Management Policy
2009	National Shelter Policy
2007	National Policy for the Agriculture-Environment System
2005	National Bio safety Framework
2004	National Environment Policy
2004	National Environmental Management Strategy
2002	National Biodiversity Strategy and Action Plan
2002	Policy on Planning for Adaptation to Climate Change
1998	Plan to Reduce the Vulnerability of School Buildings to Natural Disasters

Environmental Profile

Dominica's diverse ecosystems provide critical ecosystem services that underpin the island's socio-economic stability and ecological health. These systems deliver invaluable benefits, including coastal protection from storm surges, carbon sequestration through dense forest cover, and the provision of fresh water from watershed areas[19]. The island's coral reefs, for instance, reduce wave energy by up to 97%, protecting coastal infrastructure and communities from severe wave impacts[20]. Dominica's forests cover nearly 60% of its land area and act as

[19] Dominica, the "Nature Island," protects its vital watersheds through strong laws like the Water and Sewerage Act and National Integrated Water Resources Management (IWRM) Policy, focusing on managing 35 watershed areas to prevent pollution from farming/development, ensuring clean water supply, and building climate resilience via reforestation, buffer zones, and controlled land use, despite ongoing challenges like deforestation. Key efforts include expanding protected areas, implementing Sustainable Land Management (SLM), and projects like the Water Sector Strategic Development Project (WSSDP) to upgrade infrastructure

[20] Food and Agriculture Organization of the United Nations. (2021). Agroforestry Practices for Sustainable Livelihoods in Dominica. Retrieved from

vital carbon sinks, contributing to global climate mitigation efforts while supporting biodiversity that includes numerous endemic and rare species. These natural assets also sustain traditional livelihoods through agriculture, fishing, and eco-tourism, which collectively contribute significantly to local incomes and cultural preservation.

Climate

Dominica's climate is classified as "humid tropical marine", which is characterised by little seasonal or diurnal variation with strong and steady trade winds. There is a distinct "dry" season (between February and June) and the "wet" season (between July and December). In this connection, the lush forested interior enjoys an average annual rainfall in excess of 7,620 mm at the central peaks. This reduces to an average of about 1,270 mm per annum along the central portion of the west coast, which tends to be the driest section of the island. Average temperature values range from 27°C on the coast to approximately 21°C degrees at the highest elevations and there is little seasonal fluctuation, generally less than two degrees Celsius.

Vegetation and Soil Types

The island's terrain and climate have given rise to a wide diversity of soils and vegetation types that vary with the elevation and exposure to strong and steady trade winds. Dominica's undisturbed forests have been identified as the most extensive in the Lesser Antilles (between 60–75% forest cover), while its rain forest is considered the finest in the Caribbean. Stands of mature rain forest, montane thicket and elfin woodland, littoral woodland, scrub woodland, grasslands, secondary rain forest, and swamps and wetlands are found all over the island. Essentially, Dominica's soils are classified into eight major groups: Hydrogenic Soils, Protosols, Young Soils, Allophanoid Clay Soils, Kandoid Soils, Smectoid Clay Soils, Unstable Soils and "Other Clay" Soils. These soils are, generally, readily erodible since they tend to be unconsolidated and friable

Hydrological Resources

The island possesses abundant hydrological resources, characterised by an extensive network of rivers, lakes, waterfalls, and significant geothermal potential. The island's rugged, mountainous terrain and high rainfall contribute to this wealth of fresh water. Groundwater is exploited to a limited extent, typically in inland areas at higher elevations, meaning saltwater intrusion is not currently a widespread issue. Aquifers are present but not as extensively utilised as surface water sources. The island's rivers are harnessed for electricity generation. Hydropower plants contribute significantly to the national grid, though the infrastructure requires ongoing maintenance.

The management of these resources is guided by the National Integrated Water Resources Management (IWRM) Policy[21] and the Water Resources Act, which aim for sustainable and equitable use while building resilience to climate change. Within the context of water resources management, the main objective of water legislation is to obtain consistency in all legislation, policy and actions which relate to the protection of the quality, available quantities and sustainable use of water as a natural resource and for equitable distribution. The legislation establishes the framework for action on water resources matters. It sets out and implements agreed policies, specifies duties that are to be discharged and by whom (institutional framework), the strategies and processes that are to be used to achieve desired results and provides for compliance and enforcement initiatives. A strong legal and institutional framework is an essential tool for avoiding overlap and possible conflict among stakeholders, fostering coordination and more importantly establishing cohesive and collaborative efforts towards effective water resources management.

https://www.fao.org

[21] https://faolex.fao.org/docs/pdf/dmi161367.pdf

Hydrology

Dominica is a mountainous island where precipitation is dominated by its orography[22]. However, the current data base of hydrologic information in Dominica is limited to a record of daily rainfall at only a few locations and sporadic stream flow measurements across the island[23] In such a hydrologic setting, a carefully planned network of recording and non-recording rain-gauges and stream-gauging stations is essential for hydraulic engineering design of highway drainage structures[24]. In particular, there is a need for Rainfall Intensity Duration Frequency (IDF) Curves and streamflow frequency curves. However, the current data base of hydrologic information in Dominica is limited to a record of daily rainfall at only a few locations and sporadic stream flow measurements across the island.

Rivers

The river systems of Dominica play a vital role in sustaining these ecosystems by providing freshwater to support both terrestrial and aquatic life. The wetlands and floodplains along the rivers are essential for filtering water, preventing erosion, and providing habitats for migratory birds and fish. Wetlands, such as those along the Layou and Roseau rivers, are key to maintaining water quality by filtering pollutants and acting as natural flood buffers.

Dominica boasts of having three hundred and sixty-five rivers as is commonly known for having a river for every day of the year. While this may have been true for the natives and the people who came, this is not the case as we have seen a receding of rivers along our landscape. This is sometimes attributed to the following: irregular rainfalls and deforestation along riverbeds in areas where rivers are bounded by private land.

The rivers and watersheds are typically in good health, as much of Dominica is forested and relatively undisturbed by urban development. However, water quality is still impacted by pollution from agriculture, sedimentation, and deforestation, particularly in more populated or developed areas.

Watersheds

Dominica's watersheds are crucial not only for the island's hydrology and water supply but also for its biodiversity, agriculture, and overall environmental health. Sustainable watershed management[25] is key to ensuring that these resources are protected from the pressures of climate change, deforestation, and urbanisation, securing the long-term wellbeing of the island and its communities[26].

Dominica has several major watersheds, which are categorised based on their river basins[27]: In addition to supporting biodiversity, Dominica's watersheds provide vital ecosystem services such as water purification, flood regulation[28], and carbon sequestration. These services are crucial for mitigating climate change and maintaining the ecological balance of the island, which is highly vulnerable to the effects of global warming, such as rising sea levels and extreme weather events.

Flooding is a major concern in Dominica, particularly during the rainy season when heavy rainfall can lead to the overflow of rivers and cause widespread damage to infrastructure and agriculture. Watershed maps help predict flood-prone areas by analysing river levels, rainfall

[22] https://www.mdpi.com/2073-4433/15/9/1042 Nabukulu, C., Jetten, V. G., Ettema, J., van den Bout, B., & Haarsma, R. J. (2024). Deriving Tropical Cyclone-Associated Flood Hazard Information Using Clustered GPM-IMERG Rainfall Signatures: Case Study in Dominica. Atmosphere, 15(9), 1042.

[23] https://journals.sta.uwi.edu/ojs/index.php/wije/article/view/7709/6799 Shrivastava, G. (2016). A Road Collapse at Pont Cassé, Dominica: Hydrologic and Hydraulic Aspects. West Indian Journal of Engineering.

[24] https://keckgeology.org/wp-content/uploads/Jimerson-2018KeckDominca.pdf Jimerson, C. (2018). River development and incision on Dominica, West Indies.

[25] https://dominica.pislmsids.org/portfolio-item/quayaneri-watershed/

[26] https://www.whiteclouds.com/blog/dominica-watershed-maps/

[27] https://storymaps.arcgis.com/stories/628d5c3af4de40dabb9d94ab99f43688

[28] https://fastflood.org/project/Flood-Modelling-in-Dominica,-Grand-Bay-Watershed-Comparison

patterns, and terrain features. These maps are essential for planning flood prevention measures, such as levees, flood barriers, and early warning systems to protect communities and reduce flood damage.

Roseau River Watershed: Located in the western part of the island, the Roseau River is the longest and one of the most significant rivers. It drains much of the central and western portions of Dominica, including areas around the capital, Roseau.

Salisbury River Watershed: In the northern region, this river has its headwaters in the central mountain range and flows westward into the Caribbean Sea. It serves as an important water source for the surrounding areas.

Indian River Watershed: In the northern region, this river is essential for both its freshwater supply and its role in the island's ecosystem.

Layou River Watershed: This is one of the largest watersheds in the island, draining areas in the central and south-western portions of Dominica.

Bwa Dlo Watershed: Located in the northern part of Dominica, this watershed includes a series of smaller streams and rivers that drain into the Caribbean Sea.

Lakes

Dominica's lakes are primarily volcanic or crater lakes, with **Boiling Lake** being the most famous due to its geothermal activity. These lakes are central to the island's ecosystem, offering habitats for diverse species, providing valuable water resources, and contributing to the island's breathtaking natural beauty. Many of the lakes, like Freshwater Lake, Boeri, and Lake Antoine, are also popular for eco-tourism and hiking. Protecting these natural water bodies is important for preserving both the environment and the island's tourism industry.

These conservancies in Dominica include;

The **Boiling Lake** is located in the Morne Trois Pitons National Park, a UNESCO World Heritage site in the centre of Dominica. Boiling Lake is one of the most famous and unique lakes on the island. It is the second-largest boiling lake in the world (after New Zealand's Frying Pan Lake). The lake is filled with hot, mineral-rich water, with temperatures ranging from 82°C to 92°C (180°F to 198°F). The lake is a volcanic crater, and its boiling waters are the result of geothermal activity in the area. The surrounding area is often covered with steam, giving it an otherworldly appearance. The lake can be reached through a challenging 6-hour hike, which is popular with eco-tourists and adventurers.

The **Freshwater Lake**: Located in the central part of the island within the Morne Trois Pitons National Park. Freshwater Lake is one of the largest lakes on the island, known for its clear waters and stunning surrounding landscape. The lake is situated at an altitude of around 1,200 feet (370 metres) and is part of the island's important water systems. Freshwater Lake is home to various species of birds, such as the **Caribbean Coot** and **Purple Gallinule**, making it a significant site for bird watching. The area around Freshwater Lake is protected, as it is an important part of Dominica's water supply system.

Lake Antoine: located near the town of **Portsmouth** in the northern part of Dominica. Lake Antoine is a small, crater lake that was formed in a volcanic caldera. The lake is surrounded by lush vegetation, adding to its scenic beauty. It is a peaceful and tranquil location that draws visitors seeking a serene natural experience. The lake is home to some wildlife and is surrounded by tropical vegetation, including large trees and flowering plants. It is a popular site for hiking and exploring the natural beauty of Dominica's northern region.

Sulphur Springs: While not a lake in the traditional sense, the Sulphur Springs area near Soufrière features warm, mineral-rich pools formed by geothermal activity. The area is sometimes referred to as a "volcanic lake" due to the presence of heated pools and bubbling

mud. The Sulphur Springs area is considered the "world's second-largest hot spring" and is part of the **Soufrière-Scott's Head Marine Reserve**. The springs are famous for their therapeutic properties, and visitors can bathe in the warm, sulphuric waters. Like other geothermal features on the island, the Sulphur Springs are a result of volcanic activity. The area's distinctive smell comes from the high sulphur content in the water.

Natural Resources

Minerals

Dominica's minerals are primarily volcanic: pumice, volcanic ash (Roseau Tuff), clay, and sand, mainly used for local construction, with limited exports of pumice. While potential for copper, gold, rare earth elements (REEs), and geothermal brines exists due to its volcanic nature, large-scale metallic mining hasn't developed, with the government prioritising environment, tourism, and sustainable resource use over major extraction

National accounts place mining and quarrying at under 2 percent of Dominica's gross value added in recent years, with Invest Dominica figures showing the sub-sector fluctuating around 0.9–1.0 percent of GDP between 2019 and 2023. This makes it one of the island's smaller productive sectors, tightly tied to construction cycles, public works and hurricane rebuilding.

Geological and economic surveys describe Dominica's mineral products as cement, clay, limestone, pumice, sand and gravel, and volcanic ash, produced mainly for local construction needs, with small exports of pumice and aggregates to neighbouring islands. Pumice has historically been the primary commodity exported, while clay and limestone supply brick, pottery, and basic building materials.

Dominica has only modest and scattered mineral deposits, and mining has never played a significant role in national income. While copper occurrences have been noted in the northeast, no commercial metallic mine has been developed. Mineral exploration on the island remains limited and at an early stage.

By contrast, quarrying is active and commercially organised. The Physical Planning Division lists nine approved quarry operations producing aggregates and pumice at sites such as Colihaut, Layou, Les Pointes, Fond Colé, Pointe Michel and Pont Cassé. Companies including West Indies Aggregate Ltd, PH Williams & Co. Ltd, West Indies Sand Ltd and Carib Sand & Stone Ltd supply crushed rock, sand and pumice for domestic ready-mix plants, block makers and regional export markets

Forest

Dominica, the "Nature Isle," features diverse forests from coastal mangroves to high-altitude cloud forests, primarily categorised by elevation: lush Lowland Rainforests with towering hardwoods, cooler Montane Forests harbouring endemic parrots (Sisserou, Jaco), and Elfin Woodlands with stunted trees at the peaks, plus Dry Scrub Woodlands on the coasts, all contributing to its rich biodiversity, with over 60% forest cover.

Key Forest Types include the following:

Lowland Tropical Rainforest: Found at lower elevations, characterised by abundant rainfall, dense vegetation, towering hardwood trees (like Gommier, Balata), orchids, and ferns.

Montane Forests: Cooler, misty forests at mid-elevations, crucial for rare species like the Sisserou and Jaco Parrots, with abundant epiphytes and orchids.

Elfin Woodland (Cloud Forest): At the highest elevations, these windswept forests have short, stunted trees often covered in mist, trapping moisture for rivers.

Dry Scrub Woodland: Found along the drier west coast, featuring drought-resistant plants adapted to saline conditions.

Swamp Forest & Mangroves: Coastal wetlands and mangrove forests provide important marine nurseries and coastal protection.

Secondary Rainforest: Regrowth areas, often disturbed but still ecologically important.

In recent years, Dominica's rainforests have symbolised resilience, particularly following the devastation of Hurricane Maria in September 2017, which destroyed approximately 85 percent of the island's forests. This catastrophic loss prompted government-led reforestation initiatives, including a nationwide tree-planting program. Supported by global partnerships like PROGREEN and technical assistance from the World Bank, these efforts have enabled Dominica's forests to regenerate, restoring critical natural barriers against future climate threats.

In 2022, Dominica's government adopted a National Forest Policy with technical guidance from the World Bank and partners, marking the first update since 1949. This policy provides a framework for the sustainable management and conservation of forest resources, empowering nature preservation and economic opportunities for communities near forest areas. The policy includes modernising protected forest areas through projects like Leveraging Eco-Tourism for Biodiversity Protection in Dominica, which supports sustainable tourism by enhancing infrastructure, offering skills training, and integrating e-ticketing for forest reserves.

Human activities, however, have placed increasing strain on Dominica's ecosystems, compounding the effects of climate change. Unsustainable land-use practices, deforestation, and coastal development have fragmented habitats, reducing their resilience and biodiversity. Policy frameworks, such as Dominica's Forestry Act and marine reserve management plans, have established a foundation for conservation, but enforcement and resource allocation remain challenges[29]. Opportunities exist to enhance ecosystem resilience through nature-based solutions. For instance, watershed restoration projects, such as those targeting the Batali and La Plaine River catchments, can reduce sedimentation, enhance water quality, and improve downstream biodiversity. Similarly, sustainable agroforestry and marine conservation programs can protect ecosystems while diversifying rural livelihoods. By scaling up these solutions and strengthening governance, Dominica can safeguard its biodiversity and maximise the ecosystem services that are integral to its environmental, cultural, and economic sustainability.

Key vulnerabilities of Dominica and other SIDS include:

1. **Geographic Isolation and Size:**
   Limited land area restricts economic diversification and makes the island more vulnerable to external shocks and imported inflation. Geographical isolation increases transportation costs and limits access to global markets.

2. **Exposure to Climate Change and Natural Disasters:**
   Dominica is disproportionately affected by climate change due to its location in hurricane-prone areas and reliance on ecosystems that are highly sensitive to temperature and sea-level changes. Intense storms, rising sea levels, and shifting rainfall patterns exacerbate the risk of floods, landslides, and droughts.

[29] Commonwealth of Dominica (2020). Nationally Determined Contribution Update

3. Economic Vulnerability:
Dominica's economy is heavily reliant on tourism, agriculture, and fisheries, all of which are highly vulnerable to climate impacts. The damage caused by Hurricane Maria, for instance, decimated agricultural production and infrastructure, with lasting impacts on food security and rural livelihoods. Recovery efforts are often hampered by limited financial resources and a high debt burden.

4. Limited Adaptive Capacity:
The small population and economy of Dominica limit the government's capacity to invest in large-scale climate adaptation and resilience-building initiatives. The country relies heavily on international aid and partnerships to implement disaster risk reduction and climate adaptation projects. Programs such as the Disaster Vulnerability Reduction Project (DVRP) and geothermal energy initiatives are examples of externally supported efforts to enhance resilience.

5. Environmental Degradation:
The degradation of natural resources, including forests and marine ecosystems, reduces the island's capacity to absorb climate shocks and provide ecosystem services. Unsustainable land use practices, deforestation, and pollution from agriculture and tourism further undermine the resilience of these ecosystems.

Climate Change Scenarios and Projections for Dominica

Overview

Dominica, like other Caribbean states, faces significant climate change risks due to its geographical position and reliance on climate-sensitive sectors. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (2022)[30] highlights the vulnerability of small island developing states (SIDS) like Dominica to temperature increases, sea-level rise, and extreme weather events. This section outlines the primary climate change scenarios and projections for Dominica, supported by regional studies and national reports[31].

Temperature Projections: Projections for Dominica indicate a considerable rise in mean annual temperature by the end of the 21st century. As shown in (Figure 3), by the 2080s, increases are expected to range from 0.8°C to 3.0°C, contingent on emissions scenarios[32] . The Representative Concentration Pathways (RCPs) depicted by the heavy lines in Figure 9 are climate modelling scenarios used by the IPCC to project potential climate futures based on GHG concentrations and radiative forcing levels. These pathways describe a range of possible trajectories for climate change mitigation and its associated impacts. Higher emissions scenarios forecast more extreme warming, resulting in hotter days and more frequent heat waves. Regional Climate Models (RCMs), including those based on ECHAM4 and HadCM3, project more significant temperature rises compared to the General Circulation Model (GCM) median.

Temperature projections indicate an increase in average daily maximum and minimum surface temperatures across the Caribbean including Dominica. By mid-century (2041–60), mean annual temperatures are expected to increase by 0.85ºC and 1.15ºC in northern islands and in southern islands (Trinidad and Tobago), respectively, under RCP2.6, compared to the 1986–05 baseline period.[33] Under RCP8.5, temperature increases are projected to be more

[30] https://www.ipcc.ch/report/ar6/syr/
[31] Sensitivity of the Dominica's agricultural sector to climate change Modelling: Eitzinger A., Navarro C., Martinez E. 2023. Alliance of Bioversity International and International Center for Tropical Agriculture CIAT. Climate Action. Cali. Colombia
[32] IPCC. (2022). Climate change: Impacts, adaptation, and vulnerability. Retrieved from https://www.ipcc.ch
[33] FAO. 2023. Climate and Agriculture Risk Visualization and Assessment – CAVA. Online. Available at https://fao-cava.predictia.es/auth

substantial, reaching 1.5°C in small islands, 1.43°C in northern island, and 2.00°C in southern islands.[34] Overall, temperature increase is likely to be more pronounced in the Caribbean Sea compared to the Atlantic Ocean coastline.[35] Increasing temperatures will have wide ranging effects on human health due to heat stress and affect livelihoods in coastal nearshore and offshore fisheries as vital coastal and marine ecosystems are deteriorated.

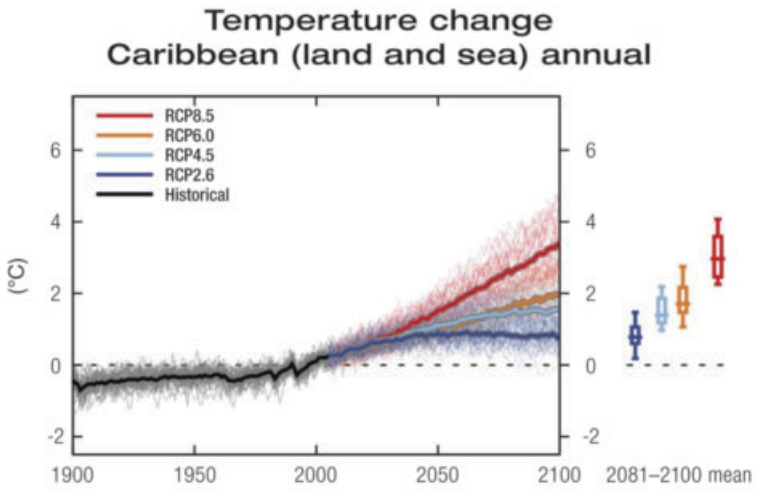


Figure 5: Comparison of modelled time series of annual temperature relative to 1986–2005 averaged over (land and sea) grid points in the Caribbean for four different climate scenarios
Source IPCC 2013

Precipitation Patterns: Rainfall projections for Dominica suggest increased variability, with a tendency toward reduced annual precipitation under climate change scenarios. General Circulation Models (GCMs) and Regional Climate Models (RCMs) indicate potential decreases in rainfall of up to 26% under high-emissions scenarios, particularly by late-century. These changes are expected to intensify the risk of flash floods and landslides during heavy rainfall events while increasing the frequency and severity of droughts during dry periods. Such shifts in precipitation patterns present significant challenges for water resource management and agricultural productivity.

Projections for the period 2080–2100 indicate substantial local variability in the Caribbean, with potential changes ranging from a 5% increase to a 10% decrease in annual precipitation.[36, 37] For smaller islands, total annual precipitation is projected to decrease by 2.2% under low-emissions scenarios (RCP2.6) and by 4.7% under high-emissions scenarios (RCP8.5) by mid-century (2040–59) compared to the 1986–2005 baseline. These trends underscore the urgent need for adaptive strategies in water management and agriculture to mitigate the impacts of shifting rainfall patterns.

Analysis of climatic indices under A2 and B2 emission scenarios (A2: high emission scenario ≈ 836 ppm and B2: low emission scenario ≈ 540 ppm) using PRECIS regional climate models suggests an increase in heavy rainfall events and temperature extremes by the end of the century (2070–99). Under a high emission scenario, the number of hot days per year (days with maximum temperatures >35°C) is projected to reach 25–65% of the total annual days by 2060 in Dominica, Saint Vincent and the Grenadines, and Saint Kitts and Nevis, combined with a reduction in cold weather events.[38] The mid-summer drought intensity index (MSDi),

[34] FAO. 2023. Climate and Agriculture Risk Visualization and Assessment – CAVA. Online. Available at https://fao-cava.predictia.es/auth
[35] USAID. 2018. Climate Risk Profile Eastern and Southern Caribbean. Available at https://www.climatelinks.org/sites/default/files/asset/document/2018-26-Feb_CadmusCISF_Climate-Risk-Profile-ES-Caribbean.pdf
[36] FAO. 2023. Climate and Agriculture Risk Visualization and Assessment – CAVA. Online. Available at: https://fao-cava.predictia.es/auth
[37] CI. (2020). Climate Information: data access platform. Available at: https://climateinformation.org/dap/
[38] USAID. 2018. Climate Risk Profile Eastern And Southern Caribbean. Available at https://www.climatelinks.org/sites/default/files/asset/document/2018-26-Feb_CadmusCISF_Climate-Risk-Profile-ES-Caribbean.pdf

indicating an intensification of dry conditions between two rainfall peaks, is also projected to increase over the Caribbean region, potentially linked to a stronger Caribbean Low Level Jet (CLLJ).[39]

Sea Surface Temperatures and Tropical Cyclones: Projections indicate a consistent rise in sea surface temperatures (SST) in the Caribbean, with an increase of 0.7°C to 2.9°C expected by the 2080s across various emissions scenarios. Warmer SSTs are likely to contribute to more intense tropical cyclones, even if the overall frequency remains stable. Historical trends, such as the intensification seen in Hurricane Maria (2017), underscore the potential for severe hurricanes with devastating impact.

It is virtually certain that SST will continue to increase throughout the 21st century, with increasing hazards to many marine ecosystems[40] (IPCC, 2022). Sea surface temperatures in the Caribbean region are projected to increase by 1°C by mid-century (2021–40), with an uncertainty range between 0.6°C and 3.0°C by the end of the century under both SSP1-2.6 and SSP5-8.5, compared to the 1981–2010 baseline period. Consequences of increased SST include coral bleaching leading to degradation of coral reefs and loss of their architectural complexity, ability to support commercially important fish biomass, and to protect the shore from storm surges. This is compounded with damage to coral and mangroves habitats; migration of fish and other marine animals to cooler water; more intense hurricanes and storm surges; and changes in the survival rate of fish and crustaceans.

Ocean pH is projected to decrease by 0.1–0.3 under SSP5-8.5 by mid-century.[41] Ocean acidification is projected to increase as the oceans continue to absorb atmospheric carbon dioxide, reducing pH, carbonate ion concentration and the availability of biologically important calcium carbonate minerals. Ocean acidification will negatively affect the ability of marine biodiversity (e.g., shellfish like conch, reef-building corals, and other related biodiversity) to build their protective shells/skeletons, cause shifts in phytoplankton species composition and decline in coastal fisheries.

Sea levels in the Caribbean are anticipated to rise by 0.1–0.2m both under SSP1-2.6 and SSP5-8.5 by mid-century, and by 0.3-0.4m under SSP1-2.6 and by 0.5–0.6m under SSP5-8.5 by the end of the 21st century (2081–2100), compared to the 1995–14 baseline period. Resultant impacts of SLR (due to increased sea temperatures and melting of glaciers and ice sheets) include coastal erosion, coastal flooding and more intense storm surges; damage to critical fish habitats (mangroves forests, sea grass and coral reefs) resulting in productivity/population declines because of damaged juvenile nursery habitats which often mean decreased recruitment to adult; inundation and damage to coastal settlements and infrastructure (fish facilities, jetties, fish landing sites, ports etc.), and overall decline in coastal fisheries. It is likely that intense tropical cyclone activity will increase (in frequency and intensity).

The climate change scenarios and projections for the Caribbean and in particular, Dominica, indicate significant exposure and vulnerability to rising temperatures, erratic precipitation, sea-level rise, and more intense storms. The region has already seen the devastating impacts of Category 5 hurricanes such as Maria and Irma (2017) and Dorian (2019) on important economic sectors. In general, climate change will produce a warmer, dryer (in the mean) region with more intense hurricanes, and possibly more variability. The frequency of categories 4 and 5 hurricanes is projected to increase by 25–30%. More frequent and extreme weather events such as storms will cause coastal erosion, damage to coastal ecosystems and coastal

[39] Vichot Llano, Alejandro, Daniel Martinez Castro, Arnoldo Bezanilla Morlot, Abel Centella Artola, and Filippo Giorgi. "Projected Changes in Precipitation and Temperature Regimes and Extremes over the Caribbean and Central America Using a Multiparameter Ensemble of RegCM4." International Journal of Climatology 41, no. 2 (February 2021). Available at https://rmets.onlinelibrary.wiley.com/doi/abs/10.1002/joc.6811

[40] IPCC. (2022). Climate change: Impacts, adaptation, and vulnerability. Retrieved from https://www.ipcc.ch

[41] IPCC. 2022. Sixth Assessment Report: Chapter 3: Oceans and Coastal Ecosystems and Their Services. P. 393.

infrastructure in and around Caribbean SIDS. Increasing levels of eutrophication and increasing SST together also enhance the blooming of pelagic (floating) algae, resulting in more frequent "green tides" and toxic algal blooms. Such events are becoming more common in the WCA, and since 2011 the wider Caribbean region has been experiencing unprecedented influxes of pelagic sargassum. These extraordinary sargassum blooms, entering the Caribbean Sea through the Lesser Antilles as large floating mats of algae, have resulted in mass coastal strandings throughout the region and significant damage to critical coastal habitats such as mass mortality of important seagrass beds and associated corals through shading, anoxia, and excessive nutrient loading. Changes in biological productivity of any of the coastal habitats will have impacts on their ecosystem services and the trophic linkages among them and will affect both the nearshore and the oceanic pelagic food chain such that impacts will not be limited to these coastal areas.[42]

Addressing these challenges will require concerted efforts, including investments in resilient infrastructure, enhanced ecosystem management, and effective early warning systems. Proactive measures will be essential to ensure the island's resilience and sustainable development in the face of these projected climate impacts.

[42] Oxenford, H. and I. Monnereau. 2018. Chapter 9: Climate change impacts, vulnerabilities and adaptations: Western Central Atlantic marine fisheries.

2. Greenhouse Gas Inventory

2. GHG Inventory

Methodological Approach Based on 2006 IPCC Guidelines

The 2006 Guidelines of the Intergovernmental Panel on Climate Change (IPCC) form the methodological backbone of the GHG inventory. These guidelines provide:

- **Sectoral coverage**: Emissions and removals are categorised into energy, industrial processes and product use (IPPU), agriculture, forestry, and other land use (AFOLU), and waste sectors.
- **Tiers of analysis**: Different levels of methodological complexity (Tier 1, Tier 2, Tier 3) are applied, depending on the availability of country-specific data and resources.
- **Key category analysis**: Emphasis is placed on identifying and prioritising significant emission sources to improve the accuracy of the inventory.
- **Uncertainty analysis**: Efforts are made to quantify and reduce uncertainties associated with emission estimates.

National Arrangements for National Greenhouse Gas Inventory in Dominica

Dominica's National Inventory Arrangements (NIA) are designed to ensure the effective preparation and management of its National Greenhouse Gas Inventory. These arrangements include:

- **Institutional Framework**: The inventory is coordinated by a central government agency, supported by key sectoral agencies, academic institutions, and non-governmental organisations (NGOs). The Ministry of Environment, Rural Modernisation, and Kalinago Upliftment serves as the lead entity. Specific roles include:
  - **Ministry of Environment, Rural Modernisation, and Kalinago Upliftment**: Acts as the coordinating body, overseeing data collection, analysis, and reporting processes.
  - **Sectoral Agencies**: Responsible for providing sector-specific data (e.g., energy, agriculture, forestry, and waste management).
  - **National Statistical Office**: Supports data verification and ensures alignment with national statistical systems.
- **Data Collection and Management**: A systematic approach to data collection involves collaboration with various stakeholders, including energy providers, agricultural entities, waste management organisations, and forestry agencies. A centralised database is maintained to ensure the accuracy and accessibility of data.
- **Capacity Building**: Regular training programs and workshops are conducted to enhance the technical expertise of personnel involved in inventory preparation. This ensures the application of IPCC methodologies and tools.
- **Quality Assurance and Quality Control (QA/QC)**: Procedures are implemented to verify data accuracy, identify inconsistencies, and address gaps. External reviews and expert consultations are part of the QA/QC process.

•Stakeholder Engagement: Engagement with relevant stakeholders, including the private sector and civil society, ensures a comprehensive and inclusive approach to inventory preparation.

Legal Mandates and Regulatory Frameworks for GHG Reporting

Dominica's legal mandates and regulatory frameworks provide the foundation for the preparation and management of the National Greenhouse Gas Inventory. Key components include:

- **Environmental Management Act**: Establishes the legal basis for environmental monitoring and reporting, including the management of greenhouse gas emissions. It mandates regular data collection and reporting by key sectors.
- **Climate Resilience Act**: Provides a framework for integrating climate resilience into national planning, including provisions for GHG reporting and mitigation.
- **Regulations on Data Sharing and Transparency**: Require public and private sector entities to report activity data and emissions in accordance with national standards. These regulations ensure data consistency and alignment with international requirements.
- **Mandates for Sectoral Agencies**: Assign specific roles and responsibilities to sectoral agencies, such as the Ministry of Agriculture, the Ministry of Energy, and waste management authorities, for providing data and supporting inventory preparation.
- **Integration with National Development Policies**: The regulatory framework aligns GHG reporting with broader national development goals, ensuring that climate action is integrated into economic planning and policy.

Dominica's National Greenhouse Gas Inventory Methodology and Data Sources

- **Overview of Inventory Planning and Management**: Dominica's GHG inventory is developed through a collaborative process involving multiple stakeholders. Planning and management are overseen by the Ministry of Environment, which ensures that inventory preparation aligns with IPCC guidelines and international reporting obligations. Annual review cycles and stakeholder coordination meetings are integral parts of the planning process.
- **Description of Methodologies for Emission Calculations**: Emission estimates are calculated following the 2006 IPCC Guidelines, using a tiered approach:
  - **Tier 1**: Default emission factors provided by the IPCC are applied where national data are unavailable.
  - **Tier 2**: Country-specific emission factors and activity data are used for key sectors, improving the accuracy of estimates.
  - **Tier 3**: Advanced models and measurement-based approaches are employed for sectors with complex emission processes, such as forestry and energy.
- **Data Sources, Collection Processes, and Key Assumptions**:
  - **Energy Sector**: Data is collected from utility companies, fuel importers, and energy surveys.
  - **Agriculture Sector**: Information is gathered from agricultural censuses, livestock databases, and fertiliser usage statistics.
  - **Forestry and Land Use**: Satellite imagery, forestry inventories, and land-use change data are analysed.
  - **Waste Sector**: Data is sourced from waste management authorities and municipal records.

- **Key Assumptions**: Assumptions include linear growth rates for sectors with incomplete historical data and IPCC default values where national data are limited.

- **National Focal Points Responsible for Inventory Compilation**:
  - The **Ministry of Environment, Rural Modernisation, and Kalinago Upliftment** serves as the primary focal point, coordinating sectoral contributions and overseeing quality control.
  - Sectoral agencies, including the Ministry of Agriculture and Ministry of Energy, act as key contributors, providing data and expert input.
  - The **National Statistical Office** supports data validation and consistency across all sectors.

Institutional, Legal, and Procedural Arrangements

National Inventory Arrangements

Dominica's GHG inventory arrangements align with the United Nations Framework Convention on Climate Change (UNFCCC) obligations. The country submits National Communications, which include a greenhouse gas (GHG) mitigation assessment, a national GHG emissions inventory, a report on climate change adaptation, and a vulnerability assessment.

The compilation of GHG inventories and mitigation analyses is supported by stakeholder workshops, data collection, and periodic reviews. However, there has been limited direct stakeholder engagement, leading to recommendations for additional workshops during various stages of inventory compilation and scenario development.

Institutional Framework and Roles of Stakeholders

- **Ministry of Environment, Climate Resilience, Disaster Management, and Urban Renewal** – Oversees environmental and climate change policies.
- **Dominica Solid Waste Management Corporation (DSWMC)**: Tracks emissions from waste disposal.
- **Ministry of Public Works, Energy & Ports**: Oversees the development and expansion of electricity production and distribution, including renewable energy sources like geothermal, solar, and wind.
- **Independent Regulatory Commission (IRC)**: Established under the Electricity Supply Act No. 10 of 2006, the IRC ensures a secure, efficient, and sustainable electricity sector, including oversight on forestry-related energy projects such as biomass.
- **Dominica Electricity Services Ltd. (DOMLEC)**: The primary electricity provider, operating hydroelectric and diesel power plants.
- **Central Statistics Office (CSO)**: Compiles data needed for mitigation analyses from all sectors.
- **Forestry, Wildlife & Parks Division**: Monitors land use changes and carbon sequestration in forests.
- **National climate change committee**: coordinated climate change policy implementation and ensure compliance with International commitments.

Legal Mandates and Regulatory Frameworks for GHG Reporting

Climate Change, Environment, and Natural Resource Management Bill (2019) aims to:

- Establish a Council on Environment, Climate Change, and Development to oversee climate policy.

  - Legally mandate GHG inventory reporting under the UNFCCC.
  - Promote policies for carbon trading and energy efficiency.
- **Electricity Supply Act No. 10 of 2006**[1]: Established the IRC, which oversees electricity generation and distribution, including renewable energy projects and emissions regulation.
- **Sustainable Energy Plan and National Energy Policy (2014)**[2]: Aims to enhance energy efficiency, renewable energy integration, and reduction of GHG emissions. Dominica's 2014 Sustainable Energy Plan and National Energy Policy (NEP) aimed to achieve energy independence and security by leveraging indigenous resources like geothermal, hydro, wind, and solar, targeting self-sufficiency by 2020 and becoming a net exporter via geothermal. Key aspects included fostering energy efficiency, developing mini-grids, community involvement, and transitioning towards a low-carbon economy, with support from bodies like the OAS and EU.
- **Draft Alternative Energy Legislation and Regulations**: Designed to create a legal framework for renewable energy development, including potential forestry-related projects such as biomass utilisation. Dominica, being a volcanic island has tremendous potential for geothermal energy, with estimates ranging from 300 MW to 1,390 MW. Site assessments, and feasibility studies have been carried out that indicate that the energy capacity in the Roseau Valley Geothermal Resource area is at least 300 MW, The current production capacity based on wells already drilled is approximately 11 MW

Overview of the Previous Inventory (2006–17)

The National Greenhouse Gas (GHG) Inventory for the period 2006–17 was conducted as part of Dominica's Third National Communication[3] (TNC) to the United Nations Framework Convention on Climate Change (UNFCCC). This inventory was compiled following the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and covered emissions from energy, industrial processes and product use (IPPU), agriculture, forestry and other land use (AFOLU), and waste sectors.

The gases included in the inventory were carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and partially fluorinated hydrocarbons (HFCs), as well as indirect GHGs such as non-methane volatile organic compounds (NMVOC) and sulphur dioxide (SO_2).

However, there were significant data limitations and uncertainties due to gaps in record-keeping, lack of trained personnel, and inconsistent data collection across sectors. These challenges were documented in the Third National Communication, highlighting the need for methodological improvements and enhanced data management.

Rationale for Recalculations and Methodological Updates

To ensure consistency and improve data accuracy, the existing national GHG inventory for 2006–17 will be recalculated where necessary. This process will involve:

- Addressing data inconsistencies by integrating improved sectoral activity data.
- Refining emission factors using country-specific or updated IPCC default values when national data were unavailable.

[1] https://www.domlec.dm/download/electricity-supply-act/?wpdmdl=587&refresh=69455eea3071e1766153962 serves as the primary legal framework for the electricity sector in the Commonwealth of Dominica. Its key purpose is to regulate the generation, transmission, distribution, and supply of electricity, and it established the Independent Regulatory Commission (IRC) to oversee the sector.

[2] https://www.ccreee.org/wp-content/uploads/2020/06/Draft-NEP-Commonwealth-of-Dominica_15-Apr14.pdf

[3] https://unfccc.int/sites/default/files/resource/Dominica%20TNC%20-%20Final%20%28March%202020%29.pdf

- Standardising methodological approaches to ensure consistency with the 2006 IPCC Guidelines across all inventory years.
- Addressing key data gaps, particularly in transport emissions, land-use change, and solid waste management, which had been highlighted as major sources of uncertainty in previous inventories.

Given that the 2006–17 inventory recorded persistent data collection issues, the recalculations aimed to improve the accuracy and completeness of the dataset, ensuring a more robust and transparent foundation for future reporting under the Enhanced Transparency Framework (ETF) of the Paris Agreement.

Data Integration for the Period 2018–22

The extension of Dominica's GHG inventory to cover the period 2018–22 was a critical component of the Biennial Update Report (BUR) and Biennial Transparency Report (BTR). This process incorporated:

- Updating activity data from national agencies, private sector contributors, and independent studies to enhance the accuracy of emissions estimates.
- Enhanced institutional arrangements to improve data collection and verification processes, reducing the reliance on estimations.
- Key category analysis and uncertainty assessments to prioritise improvements in high emission sectors.

Data Management, Archiving, and Approval Processes

- **Data Collection and Reporting**: Dominica has implemented data collection systems to track fuel consumption, vehicle emissions, and electricity usage. However, there are gaps in fuel end-use data, which affect emissions estimation for forestry and land use. GHG data is primarily sourced from government agencies, utilities (DOMLEC for electricity), and private sector stakeholders.
- **Archiving**: There is no centralised system for real-time data archiving. Recommendations have been made to establish a cloud-based database for secure and continuous GHG data storage.
- **Approval Process**: The Independent Regulatory Commission (IRC) oversees electricity regulations, ensuring compliance with GHG reporting requirements. The National Climate Change Committee (NCCC) is expected to play a role in validating inventory data.

GHG Inventory

The national inventory report describes greenhouse gas emissions and removals in the Energy; Industrial Processes and Product Use; Agriculture, Forest and Other Land Use; and Waste Sectors. Activities contributing to GHG emissions in the Energy sector included electricity generation, transportation, and International Bunkers. The IPPU sector emissions stems from the chemical uses for HFCs. The AFOLU sector contributed to both emissions and removals of GHG through sources such as changes in land use, while the maintenance and management of forests helped to remove Carbon dioxide from the atmosphere. Waste sector emissions were produced from the solid waste disposal.

Greenhouse Gas emissions to be estimated and reported on include Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). However, emissions of fluorocarbons would also be estimated and reported.

The reporting years for this initial BUR include 2018, 2019, 2020, 2021 and 2022.

The energy sector is Dominica's main source of emissions. There are signs of improvement post-21. The LULUCF sector remains a strong carbon sink, underscoring the importance of forest conservation.

Waste emissions are small but increasing slowly, suggesting room for targeted mitigation efforts.

Energy Sector

Dominica's energy sector is small and traditionally dependent on **imported fossil fuels**, particularly diesel, for electricity generation and transportation. This reliance has exposed the country to high energy costs and energy security risks, which are exacerbated by climate change impacts such as hurricanes and extreme weather events. The energy sector presents the largest sector for GHG emissions in Dominica

Current Energy Mix

- **Electricity generation** is primarily from diesel-fired plants.
- **Renewable energy** currently contributes **about 25%–30%**, primarily from **hydropower**.
- **Solar energy** is limited but growing in small-scale applications (e.g., government buildings, tourism sector).

Table 4: Energy emissions 2020 (Gigagrams)

Categories	Units	Net CO_2 (1)(2)	CH_4	N_2O	HFCs	PFCs	SF6	NF3
Total National Emissions and Removals	Gg	110.8842318	0.00649783	0.00513672	0	0	0	0
1. Energy	Gg	110.8842318	0.00530943	0.00513672	0	0	0	0
1.A. Fuel Combustion Activities	Gg	110.8842318	0.00530943	0.00513672	0	0	0	0
1.A.1. Energy Industries	Gg	53.721018	0.00217494	0.00043499				
1.A.2. Manufacturing Industries and Construction	Gg	0	0	0				
1.A.3. Transport	Gg	57.1632138	0.00313449	0.00470174				
1.A.4. Other Sectors	Gg	0	0	0				
1.A.5. Non-Specified	Gg	0	0	0				

Table 5: Energy emissions 2021

	Emissions (Gg)		
Categories	Net CO_2 (1)(2)	CH_4	N_2O
Total National Emissions and Removals	120.3563289	0.00704534	0.00575751
1. Energy	120.3563289	0.00579819	0.00575751
1.A. Fuel Combustion Activities	120.3563289	0.00579819	0.00575751
1.A.1. Energy Industries	55.855839	0.00226137	0.00045227
1.A.2. Manufacturing Industries and Construction	0	0	0
1.A.3. Transport	64.5004899	0.00353682	0.00530524
1.A.4. Other Sectors	0	0	0
1.A.5. Non-Specified	0	0	0

Table 6: Energy emissions 2022

	Emissions (Gg)		
Categories	Net CO_2 [(1)(2)]	CH_4	N_2O
Total National Emissions and Removals	105.8964315	0.006	0.005
1. Energy	105.8964315	0.005	0.005
1.A. Fuel Combustion Activities	105.8964315	0.005	0.005
1.A.1. Energy Industries	54.1671	0.002	4E-04
1.A.2. Manufacturing Industries and Construction	0	0	0
1.A.3. Transport	51.7293315	0.003	0.004
1.A.4. Other Sectors	0	0	0
1.A.5. Non-Specified	0	0	0

Energy sector emissions summary

Dominica energy sector emissions gases include CO_2, CH_4, and N_2O. CO_2 emissions peaked in 2021 at 120.36 Gg, likely due to post-COVID recovery in energy demand, then fell by 12% in 2022. CH_4 and N_2O emissions remained low and stable across the three years.

Table 7: Summary of Energy sector emissions

Year	CO_2 (Gg)	CH_2 (Gg)	N_2O (Gg)
2019	3.04	0.00017	0.00025
2020	110.88	0.0053	0.0051
2021	120.36	0.0058	0.0058
2022	105.9	0.005	0.005

IPPU Sector

It was essential to reduce and phase out the use of HCFCs in Dominica's industrial practices. Currently, the most commonly used alternatives to HFCs in Dominica are hydrofluorocarbons, (HFCs), which are non-ozone depleting substances (ODS), but still have high Global Warming Potential (GWP). The United Nations Industrial Development Organization (UNIDO) and the Montreal Protocol are working to avoid the use of these HCFCs as transitional substances and instead work towards finding long-term low-GWP solutions. Data source institutions for IPPU include: Dominica Customs and Excise Department; Min. of Foreign Affairs, International Business, Trade and Energy; Central Statistics Office (CSO), Min. of Environment/Ozone Unit, and others of interest. Datasets were received from CSO but content were incomplete, and others were received from the Ozone Officer, which gives a great outlook at the various imports on HFCs for the past 15 years and shows the timely phase out of the before used HCFCs.

Table 8: IPPU Emissions

Year	CO_2 (Gg)
2018	10.52
2019	10.48
2020	10.49
2021	10.54
2022	16.12

AFOLU Sector

Agriculture sector

Dominica's agriculture sector contributes to greenhouse gas (GHG) emissions, primarily from enteric fermentation and manure management.

Emissions from the agriculture sector have increased slightly over the reporting period.

Table 9: Agriculture sector emissions

Year	CO_2 eq
2018	612.61
2019	612.40
2020	615.36
2021	616.16
2022	616.83

Forestry, land use and land use change

Dominica's Forest Sector has been significantly highlighted as a huge carbon sink and this has been proven various times with our calculations and documentation of our updated GHGI Time series 2000–23 under our REDD+ Strategy for managing an up-to-date National Forest Greenhouse Gas Inventory[4] for regular and systematic recording of emissions and removals in that sector. Dominica's recent NDC document significantly recognises the contributions of our Forestry sector to national climate change mitigation actions and was highlighted for possible Carbon Trading potential within our projected Climate Change Resilience Development Strategy. All showing the immense importance of the Forestry sector to Dominica.

According to the 2015–25 forest reference level report[5], Land use classifications in Dominica include croplands, Forest lands, settlements, grasslands, wetlands and other lands. The main drivers of land use change in Dominica are agricultural expansion (historically for cash crops and cattle, now for housing, tourism, and settlements), urbanisation and infrastructural development, and the impacts of climate change, including devastating hurricanes and increased erosion. Deforestation due to these factors leads to significant environmental issues like landslides, siltation, and threatens biodiversity.

[4] https://redd.unfccc.int/media/2024-dom-zero-frel-report-jan-8-2024.pdf
[5] https://redd.unfccc.int/media/2024-dom-zero-frel-report-jan-8-2024.pdf

Table 10: LULUCF removals 2018

Greenhouse Gas Source and Sink Categories	Net CO_2 emissions/ removals[1,2]	CH_4[2]	N_2O[2]	NO_x	CO	NMVOC	Total GHG emissions/removals[3]
	(kt)						CO2 equivalents (kt)[4]
4. Total LULUCF	-477.59	NE, NO	NE, NO	NE	NE	NE	-477.59
4.A. Forest land	-484.99			NE	NE	NE	-484.99
4.A.1. Forest land remaining forest land	-482.90			NE	NE	NE	-482.90
4.A.2. Land converted to forest land	-2.09			NE	NE	NE	-2.09
4.B. Cropland	7.03			NE	NE	NE	7.03
4.B.1. Cropland remaining cropland				NE	NE	NE	
4.B.2. Land converted to cropland	7.03			NE	NE	NE	7.03
4.C. Grassland	0.92	NE	NE				0.92
4.C.1. Grassland remaining grassland	NE	NE	NE				NE
4.C.2. Land converted to grassland	0.92		NE				0.92
4.D. Wetlands [5]							
4.D.1. Wetlands remaining wetlands							
4.D.2. Land converted to wetlands							
4.E. Settlements	-0.55						-0.55
4.E.1. Settlements remaining settlements							
4.E.2. Land converted to settlements	-0.55						-0.55

Table 11: LULUCF removals 2019

Greenhouse Gas Source and Sink Categories	Net CO_2 emissions/ removals[1,2]	CH_4[2]	N_2O[2]	NO_x	CO	NMVOC	Total GHG emissions/removals[3]
	(kt)						CO2 equivalents (kt)[4]
4. Total LULUCF	-337.35	NE, NO	NE, NO	NE	NE	NE	-337.35
4.A. Forest land	-341.45			NE	NE	NE	-341.45
4.A.1. Forest land remaining forest land	-338.67			NE	NE	NE	-338.67
4.A.2. Land converted to forest land	-2.79			NE	NE	NE	-2.79
4.B. Cropland	4.65			NE	NE	NE	4.65
4.B.1. Cropland remaining cropland				NE	NE	NE	
4.B.2. Land converted to cropland	4.65			NE	NE	NE	4.65
4.C. Grassland	NE	NE	NE				NE
4.C.1. Grassland remaining grassland	NE	NE	NE				NE
4.C.2. Land converted to grassland			NE				NE
4.D. Wetlands [5]							
4.D.1. Wetlands remaining wetlands							
4.D.2. Land converted to wetlands							
4.E. Settlements	-0.55						-0.55
4.E.1. Settlements remaining settlements							
4.E.2. Land converted to settlements	-0.55						-0.55

Table 12: LULUCF removals 2020

Greenhouse Gas Source and Sink Categories	Net CO_2 emissions/ removals[1,2]	CH_4[2]	N_2O[2]	NO_x	CO	NMVOC	Total GHG emissions/removals[3]
	(kt)						CO2 equivalents (kt)[4]
4. Total LULUCF	-480.31	NE, NO	NE, NO	NE	NE	NE	-480.31
4.A. Forest land	-484.41			NE	NE	NE	-484.41
4.A.1. Forest land remaining forest land	-481.62			NE	NE	NE	-481.62
4.A.2. Land converted to forest land	-2.79			NE	NE	NE	-2.79
4.B. Cropland	4.65			NE	NE	NE	4.65
4.B.1. Cropland remaining cropland				NE	NE	NE	
4.B.2. Land converted to cropland	4.65			NE	NE	NE	4.65
4.C. Grassland	NE	NE	NE				NE
4.C.1. Grassland remaining grassland	NE	NE	NE				NE
4.C.2. Land converted to grassland			NE				NE
4.D. Wetlands [5]							
4.D.1. Wetlands remaining wetlands							
4.D.2. Land converted to wetlands							
4.E. Settlements	-0.55						-0.55
4.E.1. Settlements remaining settlements							
4.E.2. Land converted to settlements	-0.55						-0.55

Table 13: LULUCF removals 2021

Greenhouse Gas Source and Sink Categories	Net CO_2 emissions/ removals[1,2]	CH_4[2]	N_2O[2]	NO_x	CO	NMVOC	Total GHG emissions/removals[3]
	(kt)						CO2 equivalents (kt)[4]
4. Total LULUCF	-322.44	NE,NO	NE,NO	NE	NE	NE	-322.44
4.A. Forest land	-485.15			NE	NE	NE	-485.15
4.A.1. Forest land remaining forest land	-482.36			NE	NE	NE	-482.36
4.A.2. Land converted to forest land	-2.79			NE	NE	NE	-2.79
4.B. Cropland	4.65			NE	NE	NE	4.65
4.B.1. Cropland remaining cropland				NE	NE	NE	
4.B.2. Land converted to cropland	4.65			NE	NE	NE	4.65
4.C. Grassland	NE	NE	NE				NE
4.C.1. Grassland remaining grassland	NE	NE	NE				NE
4.C.2. Land converted to grassland			NE				NE
4.D. Wetlands [5]							
4.D.1. Wetlands remaining wetlands							
4.D.2. Land converted to wetlands							
4.E. Settlements	158.06						158.06
4.E.1. Settlements remaining settlements							
4.E.2. Land converted to settlements	158.06						158.06

Table 14: LULUCF removals 2022

Greenhouse Gas Source and Sink Categories	Net CO_2 emissions/ removals[1,2]	CH_4[2]	N_2O[2]	NO_x	CO	NMVOC	Total GHG emissions/removals[3]
	(kt)						CO2 equivalents (kt)[4]
4. Total LULUCF	-429.40	NE, NO	NE, NO	NE	NE	NE	-429.40
4.A. Forest land	-433.77			NE	NE	NE	-433.77
4.A.1. Forest land remaining forest land	-429.45			NE	NE	NE	-429.45
4.A.2. Land converted to forest land	-4.33			NE	NE	NE	-4.33
4.B. Cropland	4.65			NE	NE	NE	4.65
4.B.1. Cropland remaining cropland				NE	NE	NE	
4.B.2. Land converted to cropland	4.65			NE	NE	NE	4.65
4.C. Grassland	NE	NE	NE				NE
4.C.1. Grassland remaining grassland	NE	NE	NE				NE
4.C.2. Land converted to grassland			NE				NE
4.D. Wetlands [5]							
4.D.1. Wetlands remaining wetlands							
4.D.2. Land converted to wetlands							
4.E. Settlements	-0.28						-0.28
4.E.1. Settlements remaining settlements							
4.E.2. Land converted to settlements	-0.28						-0.28

Summary of net removals from LULUCF

The LULUCF sector has remained a major carbon sink throughout the period. 2020 saw the highest removals, while 2021 was the weakest year due to potential land disturbances or changes in forest cover.

Table 15: Summary of net removals from LULUCF

Year	Net CO_2 Removals (kt)
2018	-477.59
2019	-337.35
2020	-480.31
2021	-322.44
2022	-429.4

Waste Sector

The Dominica Solid Waste Management Corporation (DSWMC) is the sole management authority for the systematic control of the collection and disposal of municipal and industrial waste and also incorporating new technologies and resources into the recycling and re-use of some of the recoverable waste materials; such as, glass, metal and cans, and looking at composting vegetative and food material. The Solid Waste Disposal (SWD) system in Dominica is a municipal system with scheduled waste collection times based on locality; Rural = 1-2 times weekly, Sub-urban = 2 weeks, Roseau (Capital) = daily, Portsmouth = daily. All this collection is deposited into a single National Solid Waste Disposal site, which is located in Fond Cole, Dominica. The Country is separated into 10 solid waste collection zones. The characteristic of the SWD site is that it is 100% semi-aerobic which accepts waste from both municipal solid wastes including Industrial waste, sludge from waste water management, clinical waste and hazardous waste (that are not included in municipal waste). Recycling is practiced at the Dominica SWD site in the case of plastic, cans & tins, other metals, glass; and most of these

are shipped out of state and constitutes about 5% of total waste, for example: plastic is shipped to Honduras. There is no recovery of gas practiced at the SWD site.

Table 16: Waste emissions 2018 (Gigagrams)

Categories	Activity Data	Unit	Emissions [Gg]		
			CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
4.A. Solid Waste Disposal [1]			0	0.001010274	0
4.A.1. Managed Waste Disposal Sites	0.0598752	Gg		0.001001725	
4.A.2. Unmanaged Waste Disposal Sites	0.0006048	Gg		8.54926E-06	
4.A.3. Uncategorised Waste Disposal Sites	0	Gg		0	

Table 17: Waste emissions 2019

Categories	Activity Data	Unit	Emissions [Gg]		
			CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
4.A. Solid Waste Disposal [1]			0	0.001112061	0
4.A.1. Managed Waste Disposal Sites	0.0598752	Gg		0.001102566	
4.A.2. Unmanaged Waste Disposal Sites	0.0006048	Gg		9.49504E-06	
4.A.3. Uncategorised Waste Disposal Sites	0	Gg		0	
4.B. Biological Treatment of Solid Waste			0	0	0

Table 18: Waste emissions 2020

Categories	Activity Data	Unit	Emissions [Gg]		
			CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
4.A. Solid Waste Disposal [1]			0	0.001188398	0
4.A.1. Managed Waste Disposal Sites	0.0598752	Gg		0.001236391	
4.A.2. Unmanaged Waste Disposal Sites	0.0006048	Gg		1.07596E-05	
4.A.3. Uncategorised Waste Disposal Sites	0	Gg		0	

Table 19: Waste emissions 2021

Categories	Activity Data	Unit	Emissions [Gg]		
			CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
4.A. Solid Waste Disposal (1)			0	0.001247151	0
4.A.1. Managed Waste Disposal Sites	0.0598752	Gg		0.001236391	
4.A.2. Unmanaged Waste Disposal Sites	0.0006048	Gg		1.07596E-05	
4.A.3. Uncategorised Waste Disposal Sites	0	Gg		0	

Table 20: Waste emissions 2022

Categories	Activity Data	Unit	Emissions [Gg]		
			CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
4.A. Solid Waste Disposal (1)			0	0.001293626	0
4.A.1. Managed Waste Disposal Sites	0.0598752	Gg		0.001282427	
4.A.2. Unmanaged Waste Disposal Sites	0.0006048	Gg		1.11984E-05	
4.A.3. Uncategorised Waste Disposal Sites	0	Gg		0	

Summary of waste sector emissions

Waste sector emissions have shown a slow but steady increase. Although total emissions are small, the trend highlights the potential benefit of increased mitigation interventions such as improved waste management practices[6] such as composting or methane recovery.

In August of 2023 the Dominica Solid Waste Management Corporation (DSWMC) has completed its second Waste Characterisation Study in 21 years[7]. The findings of the study will inform the evaluation of Dominica's recycling potential, assessment of organic waste management options, and policy and decision making. Dominica and Grenada are the two OECS Member States demonstrating the OECS Model for Plastic Waste Separation, Collection, and Treatment, under the EU/AFD funded Recycle OECS Project.

Table 21: Summary of waste sector emissions

Year	CH_4 Emissions (Gg)
2018	0.00101
2019	0.00111
2020	0.00119
2021	0.00125
2022	0.00129

Improvement Plan and Future Recommendations

Identified gaps and challenges

- Limited stakeholder engagement in the GHG inventory process.
- Data gaps in fuel consumption, vehicle registrations, and forestry emissions tracking.
- Lack of a formalised institution for carbon trading and Clean Development Mechanism (CDM) projects.
- Inconsistent Data Collection: Gaps exist in agriculture, transport fuel use, industrial processes, and emissions from waste.
- Limited Human Resources: There is a shortage of trained personnel to conduct emissions inventory analysis.
- Lack of Legal Enforcement: There is no mandatory GHG reporting requirement for businesses or industries outside the energy sector.

Recommendations for future GHG inventory updates

- Increase stakeholder engagement via additional workshops to improve the quality of GHG reporting and mitigation planning.
- Strengthen Legislation: Enact laws requiring mandatory reporting of emissions across all sectors.
- Implement data sharing agreements with sectors for ease of information sharing
- Improve Data Management: Develop a national GHG database with secure cloud storage to ensure continuity.
- Capacity Building: Train government personnel in GHG inventory methodologies and establish a designated GHG inventory unit.

[6] https://www.unep.org/zero-waste-caribbean-new-ways-new-waves
[7] https://pressroom.oecs.int/dswmc-waste-characterisation-study-informs-modalities-for-recycling-sustainability-in-dominica

- Establish a Verification Process: Introduce an independent review mechanism for emissions data before submission to the UNFCCC.

By addressing these gaps, Dominica can significantly enhance its GHG inventory accuracy and reporting capacity while meeting its international climate commitments.

3. Mitigation Actions and Their Effects

3. Mitigation Actions and Their Effects

National Circumstances and Commitments

The updated NDC, submitted in July 2022, outlines a comprehensive climate action strategy from 2020 to 2030, building on the initial 2015 submission. This enhanced NDC advances mitigation, adaptation, and resilience goals across multiple sectors, contributing to the Paris Agreement's objectives. In addition, the NRDS stipulates that, at the highest level, the Climate Resilience and Recovery Plan[1] (CRRP) should reflect three pillars of resilience, namely: (1) Climate Resilient Systems, (2) Prudent Disaster Risk Management Systems, and (3) Effective Disaster Response and Recovery. The CRRP expands these three pillars into six results areas for a climate-resilient Dominica Based on these six (6) results areas, the Government of Dominica is committed to achieving 20 Climate Resilience Targets by 2030.

Overview of Dominica's commitment to the Paris Agreement and its NDC

The Commonwealth of Dominica, as a signatory to the Paris Agreement, has demonstrated a strong commitment to climate action, adaptation, and resilience-building. Recognising its vulnerability as a Small Island Developing State (SIDS), Dominica has pledged ambitious targets in its Nationally Determined Contribution (NDC), aiming for a 45% reduction in greenhouse gas (GHG) emissions by 2030 compared to 2014 levels.

The Paris Agreement, adopted in 2015 at COP21, seeks to:

- Limit global temperature rise to well below 2°C above pre-industrial levels while pursuing efforts to limit it to 1.5°C.
- Enhance adaptive capacity and resilience to climate impacts.
- Mobilise finance and support for developing countries to transition to low-carbon development.
- Under Article 4 of the Paris Agreement, parties are required to submit Nationally Determined Contributions (NDCs), outlining their climate targets and strategies.

Dominica's Commitment to the Paris Agreement

Dominica signed and ratified the Paris Agreement in 2016 [2]and has since been proactive in enhancing its climate commitments:

- **2015**: Submitted its first NDC with a progressive emissions reduction target.
- **2022**: Updated NDC, expanding targets to include mitigation, adaptation, and resilience.
- **Long-term vision**: Becoming the world's first climate-resilient nation.

[1] https://odm.gov.dm/wp-content/uploads/2022/02/CRRP-Final-042020.pdf
[2] United Nations. (n.d.). Paris Agreement – Status of Ratification. United Nations Treaty Collection. Retrieved February 10, 2025, from https://treaties.un.org/pages/viewdetails.aspx?chapter=27&clang=_en&mtdsg_no=xxvii-7-d&src=treaty

Fairness and Ambition in light of National Circumstances

Dominica considers its NDC to be fair and ambitious in the light of its national circumstances. [3]Dominica's NDC has been designed considering its status as a Small Island Developing State (SIDS), recognising its high vulnerability to climate change impacts and limited financial and technical capacity.

Fairness Considerations:

- **Low Contribution to Global Emissions**: Dominica accounts for an insignificant share of global GHG emissions. Despite this, the country has committed to an ambitious 45% reduction below 2014 levels by 2030.
- **High Climate Vulnerability**: Extreme weather events, such as hurricanes, significantly impact national development. Climate adaptation is a top priority, requiring financial and technical support.
- **Equity in Climate Finance and Support**: Dominica's mitigation and adaptation plans are conditional on international financial and technical assistance. The country actively seeks support from the Green Climate Fund (GCF), UNDP, and bilateral partnerships.

Ambition of Dominica's NDC:

- Transition to 100% Renewable Energy by 2030
  - Focus on geothermal, solar, and wind energy expansion.
  - Reduction of dependence on imported fossil fuels.
- Resilient Agriculture and Land Management:
  - Implementation of climate-smart agriculture practices.
  - Expansion of reforestation programs to enhance carbon sinks.
- Disaster Risk Reduction and Resilience-Building:
  - Strengthening infrastructure against climate-induced disasters.
  - Enhancing early warning systems and emergency response strategies.
- Alignment with Global Climate Agreements:
  - Contributes to Paris Agreement objectives and the Sustainable Development Goals (SDGs).
  - Supports regional efforts under the Caribbean Community (CARICOM) Climate Action Plan.

Emissions Reductions

Recognising Dominica's common but differentiated responsibility and limited capabilities to address climate change, Dominica committed to progressively reduce total gross greenhouse gas (GHG) emissions below 2014 levels (164.5 Ggs est.) at the following reduction rates: 39% by 2025; and 45% by 2030.

[3] Commonwealth of Dominica, Updated Nationally Determined Contribution (NDC, 2022)

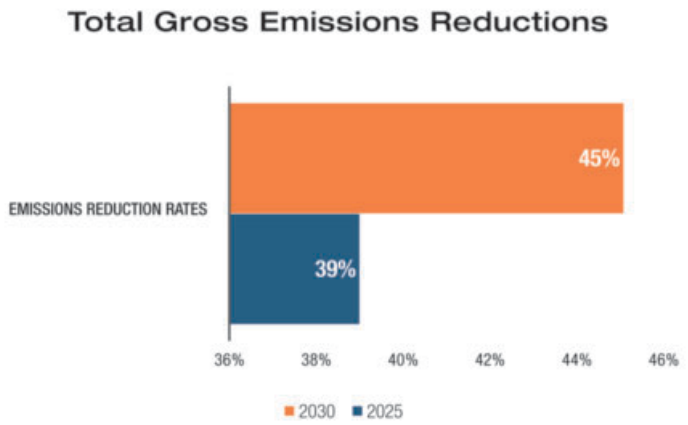


Figure 6: Total gross emissions reductions planned

By 2030, total emission reductions per sector will be as follows:

- Energy industries — 98.6% (principally from harnessing of geothermal resources)
- Transport — 20%
- Agriculture — 50%
- Manufacturing and construction — 8.8%.
- Commercial/institutional, residential, agriculture, forestry, fishing — 8.1%.
- Solid waste — 78.6%

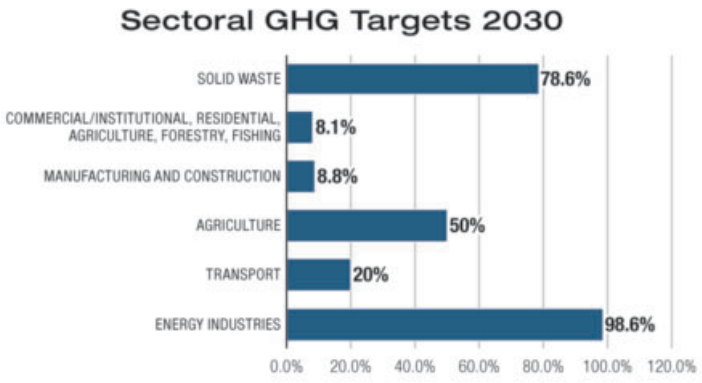


Figure 7: Sectoral GHG targets

Individual Greenhouse Gas targets-emission reductions by 2030

- Hydrofluorocarbons: 10%

Non-Greenhouse Gas targets

- 100% renewable energy usage by 2030
- Forests: 600 Gg+ carbon sequestration annually 2020 to 2030
- Agroforestry: 50% increase in agroforestry farming
- Geothermal resources: Commercial exports 200Gg+ to Guadeloupe and Martinique.

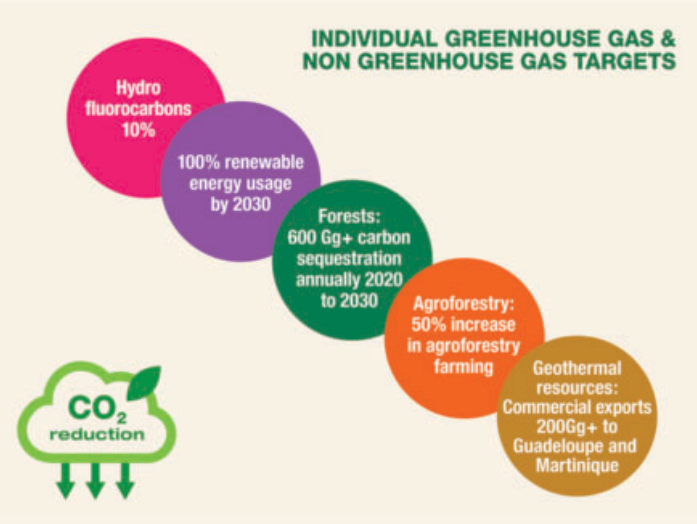


Figure 8: Individual GHG targets and non-GHG targets

Dominica aims to achieve significant reductions in GHG emissions by setting clear short-term and long-term targets, such as carbon neutrality by 2050. These targets help Dominica align with the global objectives of the Paris Agreement, contributing to efforts to limit global warming to well below 2°C above pre-industrial levels, ideally 1.5°C. By setting these goals, Dominica not only meets its international commitments but also enhances its resilience to climate impacts.

Short-term Target (2030): Reduce emissions by a specific percentage (e.g., 30-40%) from the baseline year. This target serves as an achievable milestone to gauge early progress and inform further actions.

Long-term Target (2050): Achieve carbon neutrality by focusing on renewable energy, sustainable land use, and carbon sequestration through forestry.

Mitigation Actions and Their Effects

Overview of Dominica's LEDP Goals and Strategy

Dominica's Low Emission Development Pathway (LEDP) centres on achieving sustainable economic growth while minimising greenhouse gas (GHG) emissions and enhancing climate resilience. Given its vulnerability as a Small Island Developing State (SIDS), Dominica emphasises a pathway that integrates low-carbon strategies across key sectors, notably energy, forestry, agriculture, transportation, and waste management.

Dominica's Low Emission Development Pathway (LEDP) is central to the nation's commitment to sustainable growth and climate resilience. The LEDP is designed to balance environmental protection with economic development, helping Dominica build a resilient economy while reducing greenhouse gas (GHG) emissions. This approach is particularly important given Dominica's status as a Small Island Developing State (SIDS), where vulnerabilities to climate change such as hurricanes, rising sea levels, and extreme weather events pose existential risks. By prioritising low-carbon strategies, Dominica is taking proactive steps to minimise these risks while fostering economic resilience.

This dual focus on climate adaptation and economic sustainability sets Dominica apart as a leader in the Caribbean, demonstrating how low-emission pathways can serve as blueprints for other vulnerable nations aiming to achieve both resilience and sustainable development.

LEDP Sectoral Focus Areas

The following are the critical sectors prioritised under Dominica's LEDP:

Energy

Transition to Renewable Energy

Goal: Achieve 100% renewable energy generation by 2030.

Approach: Dominica focuses on geothermal, solar, hydro, and wind energy to reduce dependency on imported fossil fuels. The geothermal energy sector is a cornerstone, with a 10 MW geothermal plant under development, projected to significantly cut GHG emissions while potentially supplying energy to neighbouring islands. Complementary sources, such as hydro and solar, will be integrated to ensure flexibility and resilience in energy generation. Hydro plants will harness Dominica's rivers, while solar installations will provide additional capacity and energy security.

Expected Impact: Significant reduction in emissions from the energy sector and decreased energy costs, fostering energy independence and resilience. Transitioning to 100% renewable energy reduces GHG emissions significantly, lowers energy costs, and enhances energy independence. This shift also helps Dominica mitigate the economic risks associated with fluctuating oil prices and supply disruptions, contributing to a more resilient and self-sustaining economy.

Energy Efficiency

Enhancing Energy Efficiency

Goal: Reduce overall energy demand by promoting efficiency across sectors.

Approach: Energy efficiency measures include retrofitting public buildings with efficient lighting, encouraging the use of energy-efficient appliances, and implementing energy-saving practices in the residential, commercial, and public sectors.

Expected Impact: Lower energy consumption leads to reduced emissions, operational cost savings, and less strain on energy resources.

Agriculture

Climate-Smart Agriculture

Goal: Implement sustainable agricultural practices that reduce emissions and build resilience.

Approach: Dominica promotes climate-smart agriculture (CSA) through soil conservation, organic farming, efficient water use, and agroforestry. Training programs focus on sustainable practices for rural communities and encourage organic and low-impact farming methods.

Expected Impact: Lower methane and carbon emissions, increased food security, and economic resilience for rural farming communities.

Forestry

Sustainable Land Use and Forestry Management

Goal: Strengthen carbon sequestration through reforestation and conservation.

Approach: Dominica's forestry policies align with the REDD+ framework (Reducing Emissions from Deforestation and Forest Degradation), supporting forest conservation, reforestation of degraded lands, and agroforestry practices. Forests are managed to serve as carbon sinks and to preserve biodiversity.

Expected Impact: Enhanced carbon sequestration, reduction in emissions, biodiversity conservation, and improved land resilience against climate impacts like hurricanes.

Waste Management

Waste Management and Methane Reduction

Goal: Minimise methane emissions from waste.

Approach: The country has improved waste management practices by promoting waste separation, composting, and methane capture technologies in landfills to reduce methane emissions. Recycling programs also help lower the volume of waste reaching landfills.

Expected Impact: Reduced methane emissions, a decrease in environmental pollution, and an overall improvement in public health and environmental quality.

Transportation

Low-Carbon Transportation

Goal: Reduce emissions from the transportation sector.

Approach: Dominica is introducing electric and hybrid vehicles, expanding public transport, and developing infrastructure for electric vehicle (EV) charging stations powered by renewable energy. Incentives encourage the transition to more fuel-efficient or electric vehicles.

Expected Impact: Lower transportation emissions, decreased air pollution, and less dependence on imported fuels.

Mitigation Policies, Actions and Plans

Dominica's approach to climate mitigation emphasises renewable energy expansion, particularly through geothermal development, and sets ambitious sectoral targets. The nation's mitigation policies target a 45% reduction in greenhouse gas emissions by 2030, compared to 2014 levels, supported by transitioning to 100% renewable energy by 2030. Key initiatives involve creating a regulatory framework for energy, establishing soft financing mechanisms for private and community renewable energy projects, and encouraging the use of hybrid and low-carbon transport options. Additionally, Dominica is implementing reforestation strategies, waste management improvements, and emissions reduction initiatives across multiple sectors, including agriculture, transport, and industrial processes.

These actions align with Dominica's broader vision to be the world's first climate-resilient nation, with mitigation plans tightly integrated with adaptation and resilience objectives. Sectoral plans under the NDC address renewable energy usage, waste-to-energy technology, sustainable forestry management, and the development of low-carbon infrastructure. Achieving these targets relies on international climate finance, technology transfer, and capacity building, underscoring Dominica's commitment to sustainable, low-emission growth in line with the Paris Agreement.

National Policies and Measures to Reduce GHG Emissions

Dominica has implemented several national policies, plans, and strategies aimed at reducing greenhouse gas (GHG) emissions. As a small island developing state (SIDS), Dominica places a strong emphasis on resilience and sustainability in its efforts to combat climate change and enhance environmental stewardship. Here are some key initiatives:

1. **National Resilience Development Strategy (NRDS) 2030**
   The NRDS focuses on achieving climate resilience and environmental sustainability as part of Dominica's vision to become the world's first climate-resilient nation. It encompasses policies aimed at reducing GHG emissions through sustainable energy initiatives, disaster resilience, and green growth. Renewable energy, especially geothermal energy development, is a critical focus of the NRDS, with plans to reduce reliance on fossil fuels significantly.

2. Geothermal Development Program

Dominica has invested in developing its geothermal resources as a primary source of renewable energy. The island has substantial geothermal potential, with the program aiming to produce a significant share of electricity from geothermal energy, reducing GHG emissions by offsetting fossil fuel use. This program aligns with Dominica's goal to achieve 100% renewable energy and serves as a cornerstone in reducing carbon emissions in the power sector.

3. Nationally Determined Contributions (NDC's) under the Paris Agreement

Dominica has committed to ambitious targets in its NDC's to reduce GHG emissions, including a 61% reduction in emissions by 2030. Key areas of focus include transitioning to renewable energy, improving energy efficiency, and enhancing resilience in sectors like agriculture, waste, and transportation. Dominica's NDC's also include efforts to enhance forest carbon sinks through reforestation and sustainable land management practices.

4. Low Carbon Climate Resilient Development Strategy (LCCRD)

This strategy provides a framework for reducing carbon emissions while fostering economic growth and building climate resilience. It outlines specific measures in sectors such as energy, transportation, agriculture, and waste management. The LCCRD focuses on energy diversification, sustainable land use, and improved waste management, which are crucial in reducing the island's carbon footprint.

5. Building Codes and Climate Resilient Infrastructure

Dominica has introduced climate-resilient building codes to ensure that new infrastructure can withstand climate impacts and reduce emissions over time[4]. This includes promoting energy-efficient buildings and sustainable construction practices to lower energy demands. These codes are part of the broader national strategy to rebuild resiliently post-Hurricane Maria, aiming for a low-carbon infrastructure sector.

6. Dominica's National Energy Policy[5]

This policy sets out goals for renewable energy integration, primarily focusing on geothermal, hydro, and solar energy. It aims to achieve 100% renewable electricity generation, reduce dependence on imported fossil fuels, and lower GHG emissions. The policy supports incentives and frameworks for energy-efficient technologies and renewable energy projects.

7. Forestry and Reforestation Programs

Dominica places a high value on its forests, which are critical carbon sinks. The government has established reforestation and sustainable forestry management initiatives to protect and expand forest areas, which play a vital role in carbon sequestration and biodiversity conservation. The reforestation efforts aim to restore areas affected by extreme weather events and increase forest coverage, reducing overall net emissions. These initiatives collectively reflect Dominica's commitment to reducing GHG emissions while building resilience against climate impacts, positioning the nation as a leader in climate action among small island developing states.

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[4] CARICOM building codes focus on resilience and sustainability, primarily through the CARICOM Regional Energy Efficiency Building Code (CREEBC), a model code based on international standards (like IECC 2018) adapted for tropical climates, covering insulation, windows, lighting, and systems for energy conservation. Alongside this, the CARICOM Regional Organization for Standards and Quality (CROSQ) promotes updated standards, including a recent Code of Practice for House Construction (CRS 10: 2023) to address climate risks and informal building, aiming for safer, more resilient structures across member states, though effective enforcement remains a challenge.

[5] A "National Energy Policy 2021" isn't a single global document, but rather a key policy for Dominica, aiming for 100% renewable electricity by 2030, reducing reliance on diesel, and becoming climate-resilient by leveraging geothermal, hydro, solar, and wind power

Energy Policy

Dominica's Draft National Energy Policy (2014)

Dominica's National Energy Policy outlines a forward-thinking strategy aimed at driving economic and social development while reducing environmental impacts. The policy focuses on harnessing sustainable and indigenous energy sources, including geothermal, hydro, wind, and solar, to produce low-cost electricity.

The policy also addresses challenges posed by high fossil fuel prices and limited energy access. It seeks to promote energy efficiency across sectors, improve fossil fuel security, and enhance the resilience of fuel storage and distribution systems against natural disasters. To ensure equitable energy access, the government plans to expand energy support programs for vulnerable groups.

The policy is supported by a companion Sustainable Energy Plan, which outlines necessary legislative, regulatory, and educational measures. The development and implementation of the policy are backed by significant contributions from local and international stakeholders, including the Organization of American States, the European Union, and partnerships with neighbouring islands and international organisation.

Objectives of Dominica's Draft Energy Policy

The Policy seeks to achieve sustainable energy development that is reliable, provides the means for universal access to energy, and provides the opportunity for a significant reduction in energy cost. Government also intends to ensure the safe and efficient management of fossil fuels through measures such as rationalising storage facilities, promoting competition to ensure the lowest prices for petroleum products, and promoting quality standards and harmonisation within the region.[6]

A key innovation in the policy is its focus on energy equity. Not only does it aim to reach 100% renewables at the national level, but it also includes provisions to extend affordable, reliable power to remote settlements. Support for mini-grid development and off-grid solar installations is intended to benefit communities that currently lack stable energy or are disproportionately affected by power disruptions during storms.

The policy replaces earlier directives by formalising renewables as the cornerstone of the energy mix. It also aims to cultivate economic activity through local green-technology jobs, such as renewable installations and technical maintenance, opening new avenues for employment and social resilience.

Table 22: Policies that include climate change

Year	Policy Document
2022	National Forest Policy
2020	Medium Term National Agriculture Policy (2021–30)
2020	Climate Resilience and Recovery Plan 2020–30
2018	Dominica Climate Resilience Act
2016	National Physical Development Plan
2016	Geothermal Resources Development Act
2015	Dominica *Intended Nationally Determined Contribution* (INDC)
2014	National Land use policy
2014	Draft *Climate Change, Environment and Natural Resources Management Bill*
2012	Dominica *Low Carbon Climate Resilient Development Strategy*
2012	Dominica *Strategic Program for Climate Resilience* (SPCR)

[6] Draft National Energy Policy of the Commonwealth of Dominica, 2014, p 4

Year	Policy Document
2012	Growth and Social Protection Strategy
2012–22	*Tourism Master Plan*
2010	*Montreal Protocol (Substances that Deplete the Ozone Layer) Regulations*, 2010
2010	National Strategy for Health
2010	Sector Strategy, Natural Resources and Energy Sector Plan
2010	Tourism Policy 2010
2010	Draft Environmental & Planning Regulations for Renewable Energy
2010	Draft *Geothermal Development Bill*
2010	*National Energy Policy* (Draft)
2010	*National Integration Water Resources Management Policy* (Draft)
2009	*Dominica Forestry Policy*
2009	*National Disaster Management Plan*
2009	*National Emergency Management Policy*
2009	*National Shelter Policy*
2007	National Policy for the Agriculture – Environment (Agri – Eco) System, 2007–25
2006	Growth and Social Protection Strategy
2005	National Bio safety Framework
2005	Draft National Implementation Plan on Persistent Organic Pollutants
2004	*National Environment Policy/National Environment Management Strategy*
2002	Dominica's Policy on *Planning for Adaptation to Climate Change*
2002	*National Biodiversity Strategy and Action Plan*
1998	Plan to reduce the vulnerability of school buildings to Natural Disasters

Mitigation Actions and Policies outlined in the Third National Communication TNC and NDC

Dominica submitted its TNC in 2020. In the TNC, Dominica communicated its intention to implement several mitigation strategies, mainly focused on the energy sector as most emissions occur from that sector.

Mitigation strategies outlined in the Commonwealth of Dominica's Nationally Determined Contributions (NDC) and Third National Communication (TNC)

Energy Sector Mitigation Strategies

1. **Transition to Renewable Energy**: Dominica has set an ambitious target to reach 100% renewable energy by 2030. The key sources include:
    - **Geothermal Energy**: Dominica's focus is on harnessing geothermal energy. The development of a 10 MW binary cycle geothermal power plant, expected to be operational by 2027, will support local needs and enable export of renewable energy to the French territories of Martinique and Guadeloupe.
    - **Solar, Wind, and Hydro Energy**: While geothermal is the dominant renewable source, solar, wind, and hydropower will also play important roles in reducing reliance on imported fossil fuels.
2. **Energy Efficiency**: Energy efficiency measures are aimed at reducing overall energy consumption and emissions from electricity use. This includes:
    - **Energy-Efficient Buildings**: Introduction of energy performance standards and net-zero buildings, with certifications like LEED and Passive House. This strategy targets new and renovated buildings, emphasising both residential and commercial sectors.

- **Energy Metering and Auditing**: Continued installation of smart meters and energy audits to inform consumers about their energy consumption, helping to reduce energy usage.

3. **Transport Sector Mitigation Strategies**
   - **Reduction of Emissions from Transportation**: Dominica has set a target to reduce transportation sector emissions by 20% by 2030. This will involve transitioning to more energy-efficient vehicles and promoting electric vehicle use.
   - **Shipping**: There is a commitment to achieve a 100% reduction in emissions from shipping.
4. **Forestry and Land Use (LULUCF) Mitigation Strategies**
   - **Reforestation and Forest Conservation**: Following the devastating effects of Hurricane Maria, Dominica has prioritised reforestation of areas affected by storms. The "Forest Enrichment Planting" strategy focuses on reforesting degraded lands, including agroforestry systems on adjacent agricultural farms. This approach not only aids in soil stability but also supports biodiversity and provides opportunities for agro-processing.
   - **Sustainable Forest Management**: Dominica's REDD+ strategy, aligned with the Warsaw Framework, aims to conserve and enhance forest carbon stocks, reduce emissions from deforestation and forest degradation, and promote sustainable forest management.
   - **Carbon Sequestration Goals**: The government aims to increase carbon sequestration by 980% over 2018 levels by 2030. The regeneration of forests is expected to sequester approximately 648 Gg of carbon annually.
5. **Agriculture and Solid Waste Sector Mitigation Strategies**
   - **Agriculture**: Efforts to mitigate emissions in the agricultural sector include maintaining emissions at or below current levels, while establishing regional best practices. By 2030, agriculture sector emissions are targeted for a 50% reduction.
6. **Solid Waste Management**: There is a target to reduce emissions from solid waste by 78.6% through improvements in waste management systems.
7. **Industrial Processes and Cross-Sectoral Measures**
   - **Industrial Processes**: The industrial sector will focus on reducing emissions by 8.8% through adopting energy-efficient technologies and processes.
8. **Cross-Sectoral Initiatives**
   - **Development of Green Industrial Eco Parks**: Geothermal energy will power eco-industrial parks, which are expected to contribute significantly to a low carbon economy.
   - **Economic Feasibility of Green Bonds**: The introduction of green bonds to finance renewable energy projects is another innovative strategy to attract investment and further the country's green transformation.

The Mitigation Measures Implemented, Undertaken, or Successfully Achieved in Dominica, Based on the TNC

Dominica's efforts to mitigate the impacts of climate change are multifaceted, combining renewable energy development, energy efficiency improvements, sustainable waste management, and agricultural practices. The country has made significant strides, particularly

in geothermal energy development, renewable energy adoption, and creating a resilient energy infrastructure. Through these initiatives, Dominica is on track to meet its 2030 targets of reducing GHG emissions by up to 44.7%, positioning itself as a model for climate resilience and low-carbon development among Small Island Developing States (SIDS).

Geothermal Energy Development

Objective: Reduce Dominica's dependence on imported fossil fuels by harnessing the island's abundant geothermal resources.

Actions Taken:

- Dominica has explored and developed its geothermal potential, particularly in the Roseau Valley Geothermal Resource Area. Studies have indicated a potential of 300 MW of energy capacity, with current production capacity from existing wells at around 11 MW.
- Funding has been secured from the Green Climate Fund (GCF) and the Clean Technology Fund (CTF) to construct a domestic geothermal plant.
- **Expected Impact**: By 2030, it is anticipated that the development of geothermal energy will lead to a 98.6% reduction in GHG emissions from energy industries. This is expected to not only address the country's energy needs but also create opportunities for energy exportation, significantly reducing emissions from electricity generation.

Energy Efficiency Programs

Objective: Reduce energy consumption and improve energy efficiency across various sectors to lower emissions and energy costs.

Actions Taken:

- **National Energy Efficiency Program**: Funding from the Global Environment Facility (GEF) and the Caribbean Development Bank (CDB) has been allocated to a national energy efficiency program targeting several sectors. The program promotes energy-saving practices, particularly in the hotel industry, public institutions, and residential areas.
- **Street Lighting Projects**: In Portsmouth, streetlights were replaced with more efficient LED fixtures, further contributing to energy savings and reduced emissions.
- **Building Efficiency**: Efforts have been made to encourage energy efficiency in building design, including the adoption of energy-efficient appliances, natural ventilation, solar water heating, and motion sensors for lighting.

Renewable Energy Conversion Initiatives

Objective: Increase the adoption of renewable energy technologies across the country to replace fossil fuel-based energy.

Actions Taken:

- **Solar Photovoltaic (PV) Systems**: A conversion program is underway, with solar PV systems being implemented across several sectors, including hotels, manufacturing, and public institutions. These installations are primarily aimed at reducing dependency on the grid and providing sustainable energy sources for key economic sectors.
- **Off-Grid Hybrid Systems**: In the aftermath of Hurricane Maria, Dominica adopted microgrid and off-grid hybrid systems that combine wind, solar, and biodiesel generators for energy production in remote and vulnerable communities. This approach is designed to ensure energy resilience, especially in areas frequently affected by storms.

Solid Waste Management

Objective: Reduce methane emissions from waste and improve overall waste management practices to mitigate GHG emissions.

Actions Taken:

- Dominica has made efforts to manage waste more sustainably by improving its waste management infrastructure, focusing particularly on reducing methane emissions from landfills. Methane is a potent greenhouse gas, and better waste management helps limit its release into the atmosphere.

Transportation and Mobility

Objective: Reduce emissions from the transportation sector, which is a significant source of GHG emissions.

Actions Taken:

- Measures include the promotion of energy-efficient transportation options such as walking, cycling, and public transport. Additionally, the government is exploring ways to enhance the efficiency of its vehicle fleet and reduce emissions from transport.
- Although not yet fully implemented, policies to reduce emissions from the transport sector are part of Dominica's broader mitigation strategy. The goal is to achieve a 16.9% reduction in GHG emissions from the transport sector by 2030.

Agriculture and Forestry

Objective: Promote sustainable agricultural practices and protect forests as carbon sinks.

Actions Taken:

- **Agriculture**: Efforts are being made to reduce emissions from the agricultural sector by promoting climate-resilient farming techniques, including the use of organic manure, better land management practices, and agroforestry.
- **Forestry**: The protection and sustainable management of Dominica's forests are critical components of the mitigation strategy. Forests act as carbon sinks, and policies have been implemented to reduce deforestation and encourage reforestation and afforestation projects. The devastating impact of Hurricane Maria on Dominica's forests has emphasised the need for accelerated recovery and reforestation efforts.

Community-Based Renewable Energy Solutions

Objective: Increase the resilience of communities by providing them with reliable, renewable energy sources.

Actions Taken:

- The government is working to establish off-grid, community-based renewable energy systems, particularly in vulnerable coastal communities that are periodically without electricity due to storms and hurricanes. These systems combine renewable energy sources like wind and solar with emergency backup biodiesel generators.
- This initiative is aimed at increasing the energy resilience of these communities while reducing their reliance on imported fossil fuels.

Institutional and Legal Frameworks for Mitigation

Objective: Strengthen the institutional and legal frameworks to support climate change mitigation efforts.

Actions Taken:

- The government has developed several key policy and legal documents to support its mitigation efforts, including the Low Carbon Climate Resilient Development Strategy, the

National Energy Policy (NEP), and the Climate Change, Environment and Natural Resources Management Bill. These frameworks provide the legal and institutional backing needed to implement and enforce the country's climate change mitigation actions.

Climate Resilient Infrastructure and Buildings

Objective: Build more climate-resilient infrastructure to withstand the impacts of extreme weather events while reducing emissions.

Actions Taken:

- The focus on building climate-resilient infrastructure includes the promotion of energy-efficient and disaster-resistant designs for buildings and public infrastructure. This initiative is part of a broader strategy to reduce the energy consumption of buildings while ensuring that they can withstand future climate-related events

Table 23: Summary status of mitigation actions undertaken between TNC and preparation of this report

Sector	Update on Mitigation Strategies
Energy Demand	– The World Bank has approved a project designed to support the Commonwealth of Dominica in developing and integrating clean, sustainable and low-cost energy. Through this $38.5 million project, a new robust transmission network will be built to withstand natural hazards, strengthening Dominica's electricity grid. January 2024. – Significant strides have been made in enhancing renewable energy projects, including the scaling of solar photovoltaic (PV) systems in residential and commercial sectors. Dominica is focusing on off-grid and community-based energy solutions, such as solar PV systems and hybrid energy grids, particularly in vulnerable communities to ensure energy resilience during extreme weather events
Energy Efficiency	Energy efficiency programs, supported by the Caribbean Development Bank and the Global Environment Facility (GEF), have targeted sectors like tourism, construction, and public infrastructure. These programs include initiatives like retrofitting public buildings with energy-efficient lighting, improving cooling systems, and promoting energy-saving technologies across industries.
Transport	**Low-Carbon Transport Program**: – The Government of Dominica, with support from the Green Climate Fund (GCF), has focused on reducing GHG emissions in the transport sector by promoting electric and hybrid vehicles. Tax incentives have been introduced to encourage the adoption of electric cars, and efforts are being made to enhance the infrastructure for electric mobility, including the development of charging stations powered by renewable energy sources like geothermal and solar energy.
Agriculture, Land Use, Land Use change and Forestry	– Forest conservation and reforestation efforts are being intensified, as forests are crucial carbon sinks. These efforts are also part of a broader ecosystem-based adaptation strategy, which includes protecting mangroves and coastal ecosystems, supported by international funding and partnerships. – Reforestation project led by The Partnership Initiative for Sustainable Land Management also. Development of monitoring and evaluation system for reforestation and forest monitoring. – CBD funding of Land Use Project – Dominica's efforts included capacity building for agricultural extension officers, focusing on climate-smart agricultural practices. This was part of a UNDP and IICA collaboration aimed at increasing resilience in rural farming communities. Training programs emphasised sustainable livelihood methods, soil management, and disaster risk reduction – In the aftermath of Hurricane Maria, Dominica focused on restoring agricultural lands through sustainable practices, including reforestation and agroforestry in the Morne Trois Pitons National Park region. These efforts were supported by the Global Environment Facility (GEF) to strengthen the resilience of agricultural landscapes.

Sector	Update on Mitigation Strategies
Waste and industrial processes	Waste management strategies aimed at reducing methane emissions from landfills have been advanced, with improved waste disposal practices and the promotion of recycling programs to lower the carbon footprint. Methane is a potent GHG, and controlling its emissions is a priority in Dominica's overall mitigation efforts.
Infrastructure	Dominica has invested heavily in building climate-resilient infrastructure, particularly in water supply and road systems. This includes upgrading facilities to better withstand natural disasters while minimising energy consumption through more sustainable designs. Hydrometeorological monitoring systems have also been enhanced to provide real-time data for better disaster preparedness and resource management.

Nationally Appropriate Mitigation Actions (NAMA's)

Dominica's mitigation actions and their effects

Dominica's mitigation actions have led to significant strides toward reducing greenhouse gas emissions and fostering climate resilience. By prioritising renewable energy, especially geothermal power, Dominica is decreasing dependency on fossil fuels, which contributes to substantial emission reductions. Sector-specific efforts, such as promoting electric vehicles, sustainable construction, and waste management improvements, have furthered low-carbon development across key areas like transport, waste, and agriculture. Additionally, Dominica's participation in international carbon markets and climate resilience programs has attracted funding and support,

Table 24: Summary of mitigation actions and their effects

Mitigation Action	Sector	Objective and Methodology/Approach	Scale and Coverage	Estimated GHG Reduction	Achieved GHG Reduction
Geothermal Energy Development	Energy /Electricity	– Transition to geothermal power for national electricity generation. Assumes sector transformation. – Installation of a 10 MW binary cycle geothermal power plant. – Construct a 33KV/69 KV Electricity Transmission Network[1]	National - 10 MW capacity with potential export to islands	150,000 tons CO_2e	In Progress
Energy Efficiency Measures	Energy Demand/ Efficiency	Reduce energy demand via energy audits, appliance standards, and efficient tech (lighting, HVAC). Focus on public infrastructure, residential buildings.	National, covering building and public sectors	Substantial reduction in electricity consumption	—
Climate-Smart Agriculture (Agroforestry)	Agriculture/ Land Use	Mitigate methane emissions through climate-smart practices, agroforestry, and soil conservation. Focuses on organic farming and enhancing resilience.	National scale, rural communities, and forest areas	Reductions in methane emissions, increased carbon sequestration	3,500 tons CO_2/year

[1] https://www.geodominica.dm/

enabling it to adopt sustainable practices that contribute to both national and global climate goals. These actions collectively enhance Dominica's adaptability to climate impacts, supporting a sustainable future while working to meet ambitious emission reduction targets.

Table 4 below summarises the mitigation actions and their effects. The table outlines Dominica's key climate mitigation initiatives across various sectors, detailing their objectives, methodologies, scale, estimated and achieved greenhouse gas (GHG) reductions, progress, challenges, socio-economic impacts, and key stakeholders. These initiatives span geothermal energy development, energy efficiency improvements, climate-smart agriculture, waste management reforms, low-carbon transport, REDD+ forest management, resilient infrastructure, and sustainable land use. The geothermal energy project aims to transform the electricity sector with a 10 MW plant, while energy efficiency measures reduce demand through audits and improved technology. Agriculture and forestry initiatives focus on carbon sequestration, sustainable land use, and watershed protection. Waste management improvements target methane capture and recycling, and the transport sector is shifting toward electric vehicles and public transit enhancements. Infrastructure development integrates climate resilience post-Hurricane Maria. Despite challenges like high costs, regulatory hurdles, and adoption barriers, these programs foster job creation, reduced energy costs, improved food security, and environmental resilience. Funding from the World Bank, Green Climate Fund, FAO, and other international organisations supports these efforts, contributing to Dominica's long-term sustainability and climate adaptation goals.

Implementation Period	Progress and Milestones	Challenges & Barriers	Socio-Economic Impacts	Responsible Institutions	Key Support/ Funding	Effects & Co-Benefits
Ongoing	– Construction phase ongoing, key milestone for NDC goals. – Confirmed Geothermal Reservoir – Completed drilling for power plant – Completed Environmental and social impact assessments for power plant and drilling – Designed Transmission network	High upfront costs, regulatory approvals, technical constraints	Potential job creation, lower electricity costs	Dominica Geothermal Development Company (DGDC)	World Bank, Government of Dominica	Reduced energy emission, increased energy security, potential revenue from exports
Ongoing	– Continuous improvements in building energy standards.	Lack of enforcement, public adoption challenges	Reduced energy bills, improved business efficiency		Green Climate Fund (GCF), Global Environment Facility (GEF)	
2020–30 Ongoing	– Expansion in agroforestry practices and climate-smart techniques. – CA$10 million Regional Gender-Responsive Climate-Smart Agriculture and Food Systems in the Caribbean project. Funded by the Government of Canada, the four-year project (2024–28) will be implemented by the Food and Agriculture Organization of the United Nations (FAO).	Land tenure issues, funding limitations	Increased food security, job creation in agriculture	Ministry of Agriculture, Fisheries, Blue and Green Economy	UNDP, IICA, FAO, World Bank	Improved soil health, resilience to climate change

Mitigation Action	Sector	Objective and Methodology/Approach	Scale and Coverage	Estimated GHG Reduction	Achieved GHG Reduction
Climate-Smart Agriculture (Agroforestry) (cont.)					
Waste Management Improvement	Waste	Reduce methane emissions through improved sorting, recycling, landfill management, and methane capture.	National, mainly landfill sites and urban areas	10,000 tons CO_2e/year	7,000 tons CO_2/year
Low Carbon Transport Initiative	Transport	Introduce electric vehicles (EVs), improve public transport infrastructure, and create EV charging infrastructure in cities.	National	17% reduction in transport-related GHG emissions	-
REDD+ Forest Management	Forestry/Land Use Change	Protect and sustainably manage Dominica's forests through REDD+ initiatives to enhance carbon sequestration.	National scale, protected forest areas, and mangroves	The expected annual removals for the period 2018 to 2025 is -22,188 tCO_2e in the forest that had no significant damage, and -430,318 tCO2e due to natural regeneration and forest recovery. Additional -1,147 removals are expected due to the conversion of other lands to forest.[2]	Forest recovery in progress
Infrastructure Development	Infrastructure	Use resilient building materials, sustainable design practices, and improve energy efficiency to indirectly reduce emissions.	National	Indirect reductions through efficiency improvements	-

[2] Dominica Forest Reference Level Report 2018-2025 (2023) p120

Implementation Period	Progress and Milestones	Challenges & Barriers	Socio-Economic Impacts	Responsible Institutions	Key Support/ Funding	Effects & Co-Benefits
	– Government of Dominica with the financial support of the World Bank (US$25.0 million) has started the implementation of the "Dominica Emergency Agricultural Livelihoods and Climate Resilience Project (DEALCRP), a five-year period intervention					
2015–30 (Pilot Programs Initiated) Ongoing	– Broader waste reforms ongoing, with implementation expected by 2030.	High waste volumes, behavioural change needed	Job creation in waste management sector	Dominica Solid Waste Management Corporation (DSWMC)	GEF, GCF,	Reduced landfill emissions, improved waste practices
2022–30 (Infrastructure in Progress)	– EV adoption pilot program launched, policy incentives in progress – Tax incentives to hybrid and electric cars, such as no duty applied when importing electric vehicles – Training on MARPOL Annex 6 on the reduction of greenhouse gas emission from Ships. This ties in with Dominica's quest for the reduction of greenhouse gas emissions, consistent with our Sustainable Development Goals. – Low Carbon Transport Project	High EV costs, limited charging infrastructure	Reduced fuel costs, increased demand for EV technicians	Ministry of Public Works and the Digital Economy, Ministry of Foreign Affairs, International Business, Trade and Energy	GCF, World Bank, private sector partnerships	Potential emissions reductions, but adoption is slow
2018–25 (Ongoing REDD+ Activities)	Reforestation and protection activities continue under REDD+.	Land use conflicts, resource constraints	Ecotourism potential, improved community resilience	Ministry of Environment, Rural Modernisation, Kalinago Upliftment and Constituency Empowerment	REDD+, FAO, International carbon markets	Increased biodiversity, enhanced carbon sequestration
Ongoing (Post-Hurricane Maria recovery efforts)	Resilient infrastructure as part of Dominica's recovery strategy post-Hurricane Maria.	High construction costs, policy gaps	Reduced maintenance costs, increased safety	Ministry of Public works, Public Utilities and Digital Economy	World Bank, CDB, bilateral donors	Long-term sustainability, resilience to climate impacts

Mitigation Action	Sector	Objective and Methodology/Approach	Scale and Coverage	Estimated GHG Reduction	Achieved GHG Reduction
Sustainable Land Use and Forest Management	Forestry	Encourage sustainable land use and reforestation to increase biodiversity and carbon capture, protect watersheds, and mitigate erosion.	National scale, with focus on protected forest and watershed areas	Enhanced carbon sequestration potential (exact figure TBD)	-

International Market Mechanisms

Dominica, as a Small Island Developing State (SIDS), is acutely aware of the impacts of climate change and has actively engaged in international mechanisms to mitigate greenhouse gas (GHG) emissions and enhance climate resilience.

Participation in International Carbon Markets

Dominica has expressed interest in utilising international carbon markets to achieve its climate objectives. In its Intended Nationally Determined Contribution (NDC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC), Dominica indicated its intention to explore market-based mechanisms under Article 6 of the Paris Agreement to meet its emission reduction targets. While specific projects under mechanisms like the Clean Development Mechanism (CDM) have not been extensively documented, Dominica's commitment to low-carbon development is evident through its national strategies and policies. The "Low-Carbon Climate-Resilient Development Strategy 2012–20" outlines plans to transition to a green economy, emphasising renewable energy and sustainable practices.[7] Dominica's participation in carbon markets allows the country to monetise efforts in forest conservation and emission reduction. Carbon credits generated through REDD+ projects can be traded on international markets.

Partnerships

Dominica has engaged in partnerships with donor organisations including the Green Climate Fund, World Bank, United Nations Development Programme, Caribbean Development Bank and the Clinton Foundation. Dominica's Citizenship By Investment Programme has also played a pivotal role in the generation of foreign direct investment to propel their climate resilience agenda under the Paris Agreement and the SDGs.[8]

International Bilateral Agreements

At COP26, the Commonwealth of Dominica entered into a bilateral agreement with Switzerland, allowing Dominica to sell carbon credits to support Switzerland in fulfilling its Paris Agreement emissions commitments. Through this partnership, both nations establish a benchmark for international climate initiatives, ensuring compliance with strict environmental protection standards. Switzerland's financial support for Dominica focuses on electrifying the transport sector and advancing geothermal energy development.

Regional Bilateral Agreements

The Climate Resilience Execution Agency for Dominica (CREAD) and Kenesjay Green Ltd. (KGL) signed a Memorandum of Understanding (MOU) to explore the development of green initiatives in Dominica. Through this agreement, CREAD and KGL have formed a strategic

[7] Dominica Low Carbon Climate Resilient Development Strategy, 2012, p 12
[8] The Commonwealth of Dominica updated NDC, 2022, p 27

Implementation Period	Progress and Milestones	Challenges & Barriers	Socio-Economic Impacts	Responsible Institutions	Key Support/ Funding	Effects & Co-Benefits
2018–30 (Implementation Ongoing)	– Reforestation projects initiated: Reforestation of watersheds, farms and forestry plots – -Watershed management plans for the Coulibistrie and Quayanerie watershed.			Ministry Environment, Rural Modernisation, Kalinago Upliftment and Constituency Empowerment	UNEP, PISLM	

partnership to advance projects related to a Green Industrial Eco Park (GIEP), green hydrogen production, carbon sequestration, and sustainable industries. As a private sector partner and project developer, KGL will collaborate with CREAD to identify and develop investment opportunities in coordination with bilateral, multilateral, and private sector stakeholders. Additionally, KGL will conduct a country assessment to pinpoint key investment priorities that will support Dominica's transition to a low-carbon economy.

Key Concepts:

- **Carbon Credits**: Each credit represents the reduction or removal of one metric ton of CO_2-equivalent emissions.
- **Compliance Carbon Markets**: Dominica can engage with regulated markets like the Paris Agreement mechanisms or regional emissions trading schemes.
- **Voluntary Carbon Markets**: Private companies and organisations purchase carbon credits to offset their emissions voluntarily.
- **Mechanisms for Sale**: Article 6.2 of the Paris Agreement: Allows bilateral or multilateral trading of emissions reductions between countries. Article 6.4: Establishes a market-based mechanism for emissions reduction projects, including REDD+.

Benefits for Dominica

- **Economic Revenue**: Financial compensation from carbon markets supports national development and forest management programs.
- **Biodiversity Protection**: Preserves Dominica's rich biodiversity, including endemic species and critical ecosystems.
- **Climate Change Mitigation**: Contributes to global efforts to reduce greenhouse gas emissions.
- **Community Development**: Supports local livelihoods through sustainable forest-based activities, such as ecotourism, agroforestry, and non-timber forest products.
- **Climate Resilience**: Healthy forests act as buffers against natural disasters like hurricanes, landslides, and floods.

Challenges and Considerations

- **Technical Capacity**: Requires advanced monitoring, reporting, and verification (MRV) systems.
- **Land Tenure and Rights**: Ensuring community rights and equitable benefit-sharing mechanisms.
- **Sustainability of Initiatives**: Balancing economic development with environmental conservation.
- Market Volatility: Carbon credit prices can fluctuate, affecting revenue predictability.

REDD+ (Reducing Emissions from Deforestation and Forest Degradation)

REDD+ (Reducing Emissions from Deforestation and Forest Degradation) is an international framework under the United Nations Framework Convention on Climate Change (UNFCCC). It aims to provide financial incentives for developing countries to reduce deforestation and forest degradation, enhance forest carbon stocks, and promote sustainable forest management.

For Dominica, conservation, sustainable forest management and enhancement of carbon stocks are the key elements of the national REDD+ strategy. The National Land-Use policy and the National Forest policy have both been developed in alignment with the overall objectives of REDD+.[9]

Dominica's participation in the REDD+ program underscores its commitment to sustainable forestry management and carbon sequestration. This initiative allows the country to monetise its forest conservation efforts by selling carbon credits on the international market. Under REDD+, countries like Dominica can receive compensation for reducing deforestation and promoting afforestation. In addition to REDD+, Dominica is exploring further opportunities within the international carbon markets. The government is seeking support for carbon finance to fund its mitigation projects, especially in the energy sector.

Key Objectives of REDD+ in Dominica

1. Forest Conservation: Protect Dominica's lush tropical forests, which cover approximately 60% of the island and are critical for biodiversity and ecosystem services.
2. Emission Reduction: Reduce greenhouse gas emissions from deforestation and forest degradation by adopting sustainable practices.
3. Community Involvement: Engage local and Indigenous communities in forest management and provide them with economic benefits.
4. Enhancement of Carbon Stocks: Implement reforestation, afforestation, and agroforestry initiatives to increase forest cover.
5. Climate Resilience: Strengthen Dominica's natural defences against extreme weather events by maintaining healthy forests.

The following elements will be developed under REDD+ in Dominica:

- National Strategy or Action Plan
- National forest reference emission level and/or forest reference level (Completed in 2023)
- Robust and transparent national forest monitoring system
- System for providing information on safeguards

The UNFCCC defines the three phases of REDD+ as:

I Readiness Phase:

Countries design national strategies and action plans with relevant stakeholders, build the capacity to implement REDD+, work on REDD+ related policies and measures, and design demonstration activities.

II Implementation Phase:

National strategies, policies and action plans proposed in Phase I are demonstrated and tested. This may include results-based demonstration activities and may require additional capacity building, technology development and transfer.

[9] The Commonwealth of Dominica updated NDC, 2022, p 38

III Results-Based Payments:

Results-based actions are implemented at the national level and results are fully measured, reported and verified. Countries can access results-based payments when they have completed the reporting, assessment and analysis processes under the UNFCCC.[10]

NDC Tracking and Progress Assessment

NDC Implementation plan

Successful NDC implementation requires inter-ministerial and inter-sectoral coordination, new or updated laws and policies, financial support and continuous monitoring and evaluation. The Government of Dominica has shown its commitment to climate action through the development of institutional, regulatory and systematic frameworks, upon which successful NDC implementation hinges on. Dominica's mainstreaming of climate change into national and sectoral development planning is evident in their strong track record of regulatory development and alignment with other global agreements, obligations and goals such as the Sustainable Development Agenda 2030 and the Sendai Framework for Disaster Risk Reduction, institutional strengthening and project development.[11] There are also, institutional, regulatory and systematic frameworks in support of the NDC Implementation Plan.

Introduction: Why Tracking NDC Progress is Essential

Dominica, as a Small Island Developing State (SIDS), faces heightened vulnerabilities to climate change, including extreme weather events, rising sea levels, and economic disruptions. As a signatory to the Paris Agreement, Dominica has committed to reducing its greenhouse gas (GHG) emissions and enhancing resilience through its Nationally Determined Contribution (NDC).

Tracking progress in achieving NDC goals is critical to:

- **Assess Effectiveness**: Evaluate whether mitigation, adaptation, and resilience-building efforts are achieving the intended impact.
- **Ensure Transparency**: Provide clear, measurable, and verifiable data for domestic and international reporting under Article 4 of the Paris Agreement.
- **Facilitate Decision-Making**: Support evidence-based policy adjustments and resource allocation.
- **Attract Climate Financing**: Demonstrate progress to secure international funding from mechanisms such as the Green Climate Fund (GCF) and Global Environment Facility (GEF).
- **Strengthen Institutional Capacity**: Improve coordination between government agencies, private sector stakeholders, and local communities in climate governance.

Dominica's National Context and the Role of NDC Tracking

- As a SIDS, Dominica is disproportionately affected by climate change but also has high potential for climate resilience through sustainable land management, renewable energy, and ecosystem-based adaptation.
- The Environment, Rural Modernisation, Kalinago Upliftment and Constituency Empowerment is tasked with overseeing NDC implementation and tracking progress.

[10] UN-REDD Programme. (2021). Fact Sheet 1: About REDD+. Retrieved January 10, 2025, from https://www.un-redd.org/sites/default/files/2021-10/Fact%20Sheet%201-%20About%20REDD3.pdf.

[11] The Commonwealth of Dominica updated NDC, 2022, p 15

- The integration of disaster risk reduction (DRR) and climate adaptation into the national policy framework ensures that tracking NDC goals aligns with broader sustainability objectives.

Institutional Arrangements for NDC Tracking

Policy and Legislative Framework Supporting NDC implementation

Dominica has established an institutional framework to manage and ensure successful decarbonisation of the economy, support ambitious climate action, enhance adaptive capacity and strengthen resilience. A regulatory framework has also been developed, which includes legislation, policies, plans and strategies in response to climate change to enhance its capacity to effectively integrate low emission and climate-resilient actions into national development, economic and social priorities and objectives. In addition, the Government recognises the essential roles of financial support, capacity building, technology transfer and just transition of the workforce, which successful implementation of the NDC hinges upon.[12]

Key National Policies, Frameworks and Strategies

1. **National Resilience Development Strategy (NRDS) 2030**
   - Serves as the overarching framework for climate action.
   - Integrates climate resilience, disaster risk reduction, and environmental sustainability into national planning.
   - Guides sectoral policies and development programs supporting NDC goals.
2. **Low-Carbon Climate-Resilient Development Strategy (LCCRDS)**
   - Focuses on reducing greenhouse gas (GHG) emissions.
   - Promotes renewable energy, energy efficiency, and sustainable agriculture.
   - Provides pathways for climate adaptation and mitigation.
3. **Climate Resilience and Recovery Plan (CRRP)**
   - Developed post-Hurricane Maria to build a climate-resilient economy.
   - Aims to integrate climate adaptation into all sectors.
   - Supports Dominica's ambition to become the first climate-resilient nation in the world.
4. **National Climate Change Policy and Action Plan (2019–24)**
   - Provides a roadmap for mainstreaming climate adaptation and mitigation across sectors.
   - Aligns with the Paris Agreement and UNFCCC goals.
5. **Energy Conservation Policy and Action Plan**
   - Supports Dominica's commitment to achieving 100% renewable energy by 2030.
   - Includes policies for energy efficiency in public and private sectors.
6. **Agriculture Disaster Risk Management Plan (2014–19)**
   - Strengthens climate resilience in agriculture through early warning systems and climate-smart practices.
   - Supports food security and adaptation to climate-induced risks.
7. **Climate Resilience Act (2018)**
   - Established the Climate Resilience Execution Agency for Dominica (CREAD).
   - Provides legal backing for climate resilience projects and investments.

[12] The Commonwealth of Dominica updated NDC, 2022, p 3

8. **Climate Change, Environment, and Natural Resource Management Bill (2020)**
    - Institutionalises climate change policies into national governance.
    - Strengthens environmental protection, disaster risk reduction, and sustainability measures.
9. **Sustainable Land Management (SLM) Framework**
    - Provides guidelines for sustainable use of land resources to mitigate emissions from deforestation and land degradation.
10. **Renewable Energy Laws and Regulations**
    - Includes legislation promoting geothermal, solar, and wind energy projects.
    - Establishes feed-in tariffs and incentives for renewable energy investments.

Tracking Progress on NDC Implementation

To effectively track progress, a set of quantifiable indicators is used across mitigation, adaptation, and resilience-building activities. These indicators are categorised into different sectors and themes:

Components of the Tracking Framework

NDC tracking requires a comprehensive framework that integrates institutional coordination, data management, and monitoring systems. The key components include:

Institutional Arrangements for NDC Tracking

- **Lead Agencies**: Ministry of Environment, Rural Modernisation, and Kalinago Upliftment
- **Sectoral Focal Points**: Agencies responsible for energy, agriculture, forestry, and waste management report progress.

Key Indicators and Metrics

- **GHG Emissions Reduction**: Sector-wise tracking of emissions from energy, transport, forestry, agriculture, and waste.
- **Renewable Energy Transition**: Progress towards Dominica's 100% renewable energy goal by 2030.
- **Climate Resilience Measures**: Adaptation actions for water security, disaster risk reduction, and food security.
- **Financial Mobilisation**: Funds secured for NDC implementation through domestic and international sources.

Timeframes and Reporting Frequency

Dominica's NDC implementation framework includes a structured timeframe and reporting frequency to ensure accountability and progress tracking. The country submits biennial reports to the UNFCCC, contributing to the Global Stocktake every five years. Additionally, annual progress reviews are conducted by national institutions to assess advancements in mitigation and adaptation efforts. These evaluations follow defined timeframes, use key performance indicators (KPIs) to measure success, and rely on a tracking template aligned with the UNFCCC's Enhanced Transparency Framework (ETF) to ensure consistency and accuracy in reporting.

- **Biennial Reporting** to the UNFCCC (Global Stocktake every five years).
- **Annual Progress Reviews** conducted by national institutions.
- Key Performance indicators
- Tracking template following UNFCCC'S Enhanced Transparency Framewo

Mitigation Actions, Wider Benefits and Links to Sustainable Development Goals (SDG)

Below is an assessment of the benefits associated with the mitigation strategy, by sector, linking to the Sustainable Development Goals. The mitigation actions can only be achieved through partnership national, regional, and international and it is important that developing countries receive support to implement these actions. This section shows the direct link with policy changes towards sustainable development, science and technology, promotions for our energy transition and emissions reduction for each sector to achieve the SDGs.

Table 25: Summary of mitigation actions and links to sustainable development goals

SECTOR	Key Aspects	Related SDG
Energy Demand	**Energy Security and Independence**: Reduction in energy consumption enables a clean renewable energy system, reducing fossil fuel demand and boosting the economy by lowering foreign exchange needs.	**SDG 3**: Reduces pollutants (NO_X, SO_2, PM, CO), improving health and environment. **SDG 8:** Creates jobs in energy-efficient equipment installation and retrofits. **SDG 9:** Retrofitting of government buildings with energy-efficient tech. **SDG 11**: Reduces local air pollution from fossil-fuel power generation. **SDG 12**: Encourages responsible consumption with short pay-back periods for energy-efficient upgrades. **SDG 13**: Critical for climate action integration into national policies.
Electricity Generation	**Energy Security and Independence**: Reduces reliance on imported fuel as local renewable sources meet demand.	**SDG 3**: Reduces pollutants, improving health. **SDG 7**: Renewable energy improves affordability and is cleaner than diesel. **SDG 8**: Employment opportunities in renewable energy sector. **SDG 9**: Promotes clean technology adoption. **SDG 11**: Reduces urban environmental impacts and benefits surrounding ecosystems. **SDG 12**: Promotes efficient resource use. **SDG 13**: Integrates climate action into policies.
Transport		**SDG 3**: Reduces pollutants from diesel, improving health. **SDG 7**: EVs and fuel efficiency reduce diesel and gasoline costs. **SDG 8**: Job opportunities in EV maintenance and infrastructure. **SDG 11**: Expands access to sustainable transport systems. **SDG 12**: Promotes sustainable fuel consumption. **SDG 13**: Critical for climate policy integration. **Energy Security and Independence**: Reduces fossil fuel demand through electrification and fuel efficiency.
Agriculture, Land Use, and Forestry		**SDG 2**: Agroforestry supports sustainable food production. **SDG 8**: Jobs and raw materials from sustainable agroforestry. **SDG 12**: Promotes sustainable natural resource use. **SDG 13**: Important for climate policy integration. **SDG 14**: Protects coastal ecosystems like seagrass and mangroves. **SDG 15**: Agroforestry enhances biodiversity, soil quality, and crop yields.
Industrial Processes and Product Uses		**SDG 11**: Reduces pollution from industrial emissions, aiding sustainable urban development. **SDG 13**: Essential for climate change measures in policies.
Waste		**SDG 11**: Reduces waste in landfills and improves urban soil health via composting. **SDG 12**: Reduces waste generation by promoting recycling and reuse. **SDG 13**: Integrates climate action into waste management. **SDG 14**: Composting reduces environmental impact on surrounding ecosystems. **SDG 15**: Composting benefits soil nutrients, fertility, and crop yields.

Challenges and Barriers

Dominica's climate mitigation efforts face several interrelated challenges that hinder implementation and long-term success. Limited financial resources and high upfront costs make large-scale renewable energy and infrastructure projects difficult to sustain, especially given reliance on unpredictable external funding. Dependence on international technical expertise further increases costs and risks knowledge gaps once experts depart. Extreme weather events frequently disrupt infrastructure, diverting resources toward repairs instead of proactive measures. Institutional capacity constraints and weak coordination slow project planning and execution, while inadequate data availability for MRV (Measurement, Reporting, and Verification) hampers emissions tracking and funding access. The transportation sector remains highly dependent on fossil fuels due to high costs and limited EV infrastructure. Public awareness and engagement are often low, delaying policy adoption and behavioural shifts. Economic dependence on agriculture and tourism creates resistance to adaptation investments due to fears of financial losses. Additionally, access to renewable technology is restricted by high costs and import

Table 26: Summary of challenges and barriers of mitigation strategies

Challenge Area	Challenge	Barrier
Limited Financial Resources	High upfront costs for mitigation strategies like renewable energy transition or infrastructure upgrades; reliance on unpredictable external funding.	High costs deter large-scale projects; limited domestic funds restrict maintenance and improvements, impacting project sustainability.
Dependence on External Technical Expertise	Lack of local expertise for advanced technologies like geothermal energy and carbon capture.	Dependency on international experts increases costs and risks knowledge gaps, affecting continuity and project success post-departure.
Vulnerability to Extreme Weather Events	Susceptibility to hurricanes, heavy rainfall, and sea-level rise disrupts infrastructure and mitigation efforts.	Frequent damage and required repairs drain resources, reduce strategy effectiveness, and shift focus from proactive to reactive measures.
Limited Institutional Capacity and Coordination	Small public institutions may lack the capacity to manage complex climate projects.	Insufficient capacity hinders planning and monitoring, while poor coordination causes inefficiencies and delays.
Data Availability and Quality for MRV	Accurate data needed for effective MRV processes may not be available.	Limited historical data on emissions hampers tracking, impact evaluation, and securing funding, as donors often require detailed reporting.
High Dependence on Fossil Fuels for Transportation	Transportation sector heavily relies on fossil fuels, with costly shifts to low-carbon options.	High costs and lack of infrastructure for EVs limit adoption; without incentives, low-carbon options remain inaccessible.
Limited Public Awareness and Engagement	Broad understanding and support for climate action may be limited in some communities.	Low engagement slows mitigation efforts, making community support for policy changes and behavioural shifts more challenging.
Economic Dependence on Climate-Sensitive Sectors	Agriculture and tourism, key sectors, are highly vulnerable to climate impacts.	Investment for adaptation is difficult to secure; mitigation efforts may face resistance due to perceived economic impacts.
Limited Access to Technology and Renewable Energy Equipment	High cost and import dependency for renewable technology like solar panels.	Import taxes and limited availability slow renewable adoption, as technology becomes less accessible.
Short-Term Planning Cycles and Policy Continuity	Long-term climate mitigation requires consistent policy support across political cycles.	Changes in priorities disrupt funding, scale down projects, or divert resources, hampering long-term climate initiatives.

Strategies to Overcome Challenges

Dominica faces a range of challenges in implementing its climate mitigation strategies, including financial constraints, technical capacity limitations, extreme weather vulnerabilities, and institutional coordination gaps. Despite these barriers, the country remains committed to achieving its ambitious climate goals, including transitioning to 100% renewable energy and significantly reducing greenhouse gas emissions across key sectors. Addressing these challenges requires a multifaceted approach that combines innovative financing, local capacity building, policy strengthening, technological advancements, and community engagement. This section outlines targeted strategies to overcome these obstacles, ensuring long-term sustainability, enhanced climate resilience, and alignment with Dominica's vision of becoming the world's first climate-resilient nation.

1. **Securing Sustainable and Diversified Funding**
   - **Leverage International Climate Funds**: Strengthen engagement with entities like the Green Climate Fund (GCF), Global Environment Facility (GEF), and World Bank for long-term financial support.
   - **Public-Private Partnerships (PPP)**: Encourage private sector investment in renewable energy, waste management, and low-carbon transport through tax incentives and financing mechanisms.
   - **Develop Green Bonds & Carbon Trading**: Establish a green bond market to attract climate-resilient infrastructure investment and participate in carbon trading under REDD+ and other international mechanisms.
2. **Reducing Dependence on External Technical Expertise**
   - **Local Capacity Building**: Invest in training programs for engineers, technicians, and policymakers to develop in-country expertise in renewable energy, MRV systems, and climate-resilient infrastructure.
   - **Establish a Climate Innovation Hub**: Develop a research centre focused on technology transfer, innovation, and local adaptation solutions to reduce reliance on foreign experts.
   - **Strengthen University and Vocational Training Programs**: Collaborate with international institutions and technical universities to provide specialised degrees and certifications in climate sciences and green technology.
3. **Enhancing Climate Resilience Against Extreme Weather Events**
   - **Climate-Resilient Infrastructure**: Integrate hurricane-resistant construction codes and nature-based solutions (e.g., mangrove restoration, green roofs) to protect infrastructure from climate-related damage.
   - **Early Warning Systems & Disaster Preparedness**: Improve hydrometeorological monitoring and integrate AI-driven predictive modelling to anticipate climate impacts and enable proactive responses.
   - **Resilient Agricultural Practices**: Expand climate-smart agriculture initiatives, including drought-resistant crops, agroforestry, and improved irrigation techniques.
4. **Strengthening Institutional Capacity and Coordination**
   - **Establish a Central Climate Authority**: Create a National Climate Coordination Unit responsible for aligning mitigation actions across different ministries and sectors.
   - **Improve Inter-Ministerial Collaboration**: Enhance policy integration between environment, energy, transport, and agriculture sectors to ensure a unified approach to climate goals.
   - **Regular Capacity Audits**: Conduct periodic assessments of institutional gaps and provide targeted training and recruitment to address inefficiencies.

5. Improving Data Availability and MRV Systems

- **Digital MRV Platforms**: Develop an online emissions tracking system using satellite-based remote sensing and IoT-enabled monitoring devices for real-time data collection.
- **Third-Party Verification & QA/QC Standards**: Strengthen independent verification processes to ensure data accuracy, transparency, and credibility in climate reporting.
- **Integration of Blockchain for Transparency**: Use blockchain technology to secure and verify climate data for reporting and funding applications.

6. Accelerating Transition to Low-Carbon Transport

- **Expand EV Infrastructure**: Develop nationwide EV charging stations powered by renewable energy and provide zero-import duties on electric vehicles (EVs).
- **Public Transport Modernisation**: Invest in electric buses, bike-sharing programs, and improved urban transit systems to reduce dependence on fossil-fuel-based transport.
- **Fleet Transition Incentives**: Provide tax rebates and financing assistance for businesses to convert to hybrid or electric vehicle fleets.

7. Enhancing Public Awareness and Engagement

- **Climate Education Campaigns**: Launch nationwide sustainability awareness programs in schools, communities, and workplaces to promote climate action literacy.
- **Behavioural Incentives for Sustainable Practices**: Introduce rewards and subsidies for households and businesses that adopt energy-efficient appliances, solar PV systems, and waste recycling.
- **Community-Led Climate Initiatives**: Support grassroots organisations and cooperatives to engage in reforestation, sustainable farming, and local renewable energy projects.

8. Diversifying Economic Sectors to Reduce Climate Vulnerability

- **Eco-Tourism Development**: Expand low-impact tourism activities such as marine conservation, reforestation tourism, and cultural heritage preservation.
- **Sustainable Agriculture & Agri-Tech Innovation**: Support hydroponic farming, organic certification programs, and carbon-smart farming as economic alternatives.
- **Green Manufacturing & Circular Economy**: Encourage waste-to-energy initiatives, biogas production, and sustainable product development (e.g., bamboo-based packaging).

9. Increasing Access to Renewable Energy Technologies

- **Eliminate Import Barriers**: Reduce import taxes on solar panels, battery storage, and green technologies to lower costs and boost adoption.
- **Community-Based Renewable Energy Cooperatives**: Establish off-grid solar and micro-hydro projects for rural electrification, allowing communities to co-own and benefit from energy production.
- **Energy Storage & Grid Modernisation**: Invest in battery storage solutions and smart grid technology to integrate intermittent renewables efficiently.

10. Ensuring Long-Term Policy Continuity

- **Enact Climate Legislation**: Pass climate laws that mandate emissions reduction targets, making policies resistant to political changes.
- **Long-Term Climate Financing Plans**: Develop multi-year budget allocations for mitigation programs to ensure sustained funding.

- **Institutionalise Climate Resilience in National Development Plans**: Embed climate action into all government policies, ensuring cross-sectoral commitment and alignment with national priorities.

4.

Finance, Technology and Capacity Building Needed and Received

4. Finance, Technology and Capacity Building Needed and Received

Financial Needs

Dominica has recognised the need for adequate finance for implementing activities related to the priority sectors namely, energy, agriculture, forestry, transportation, waste management, and tourism as outlined in the Nationally Determined Contribution (NDC) and the Low Carbon Development Strategy (LCDS). Additionally, support for reporting obligations under the UNFCCC is provided for operational support in fulfilling reporting obligations. These funding arrangements include a combination of Dominica's budgetary allocations/ investments, loans, and grants from multilateral and bilateral entities, and also through private sector investment.

One significant focus is on expanding Dominica's geothermal resources, which is seen to foster renewable energy production and potentially export energy to neighbouring regions. This flagship project is part of Dominica's strategy to become carbon neutral by 2030, which would require considerable financial investments.

Dominica's overall, financial needs are centred around building resilience to climate impacts, transitioning to renewable energy, and ensuring sustainable development. International climate finance mechanisms, such as grants, loans, and technical assistance, play a crucial role in supporting these efforts.

Dominica in 2015 and 2017 due to extreme climatic weather conditions saw more than 200% GDP loss. This sheer devastation impacted human life, health, and infrastructure and requires a significant amount of revenue for both clean-up and rebuilding operations. This system puts a significant constraint on the national budget and further exacerbates small economies like Dominica, ability to access the necessary financing that is required to implement cross-cutting programs and systems that seek to mitigate and adapt to the adverse and disproportionate impact to climate change.

Through this chapter Dominica seeks to articulate its needs and resource allocation through its national budget in meeting its obligation to the UNFCCC in preparation of its BUR. Despite the challenges faced by Dominica the island is committed to show casing its ambitious agenda in becoming the first climate resilient country in the world through the programs identified in the CRRP, NRDS, INC, TNC.

Table 27: Financial resources needed by Dominica

Sector	Title	Cost USD
Energy	Geothermal Generation	75,000,000.00
	Energy Efficiency	2,300,000.00
	Solar Photovoltaic Hotel Sector	1,000,000.00
	Solar Photovoltaic Manufacturing sector	3,300,000.00
	Street light Replacements	1,200,000.00
Forest	Eco Forest Audits	817,844.00
	Plant one million trees	3,717,472.00
	Mangrove stabilisation	780,669.00
Transportation		
Waste Management	Reducing Methane Emissions in Landfills	4,500,000.00
	Post-Disaster Waste Management	2,540,000.00
Water		20,000,000.00
Infrastructure	DVRP Project	39,500,000.00
	DOMCREP	10,000,000.00
	Resilient Housing Scheme	
	Kalinago Territory Development Plan	15,613383.00
	Museum Knowledge Centre	7,527,881.00
Cross-Cutting	TS for Global Subnational Climate Fund	28,000,000.00
	National E Mobility Project	67,000,000.00

Climate related shocks are largely seen across the Dominica landscape but the most visible are the impact to physical infrastructure, the environment, economic and socio physio. Economies like Dominica are constantly shifting and allocating budgetary support related to responding, mitigating and adaptation measures needed to combat the impacts of climatic events. These fiscal allocations are reflected in the Government national budget for the period 2020/2021, 2021/2022 and 2022/2023 respectively.

Due to scarcity of resources and limitations in access grant funding required to implementation national project needed for both mitigation and adaptation measures the amount of resources allocated from the national recurring budget related to the country's priority sector is low. This hinders the Island ability to mainstream these projects into agencies work programs after the implementation of climate related actions, due to limitations in budget allocation.

The demand for national resources is intense, with various sectors needing more support. National GDP growth took significant hits in 2015 and 2017. Consequently, natural resource management agencies, like other departments, grapple with the costly task of tackling climate

change impacts. Although natural resources hold the potential for boosting development, the agencies managing them often face severe budget constraints. This results in subpar organisational performance. Still, these agencies know the necessary improvements and remain dedicated to addressing gaps. They actively seek funding to fulfil their mandates while working to minimise inefficiency.

Capacity Support Needs

Dominica's capacity, technology needs and priorities are closely tied to its efforts to enhance resilience against climate change. The country has identified several key areas where capacity building and technological advancement are crucial. These include and are detailed in the table below:

Table 28: Capacity building and technology needs

Area	Priority Areas	Proposed Actions to Address Gaps	Technology Needs
Adaptation			
Cross-cutting Priorities			
Water			
Agriculture	• Develop and implement climate-smart agriculture • Improve water resource inventory and management to regulate harvesting and improve conservation and export of water • Improve soil and land management • Improved Agriculture land and use planning • Crop diversification program including organic production • Increase Agricultural value-added products		• Promotion of improved crop varieties • New and improved appropriate Agriculture technologies
Fisheries	• Marine product development and diversification • Institutional strengthening and capacity building • Improved sanitation and storage and food quality		• Alternate fishing methods and technologies
Health	• Climate SMART Health Care Facilities • Preparation and planning for continued provision of health care services after extreme climate events	• Capacity Development training	• Research on climate impactors on vectors and agents of transmission of disease • Technology to reduce risk during extreme weather events • Technology to improve service continuity during climatic events
Tourism			
Education			
Area	• Priority Areas	• Proposed Actions to Address Gaps	• Technology Needs
Mitigation			

Area	Priority Areas	Proposed Actions to Address Gaps	Technology Needs
Energy Generation	• Finance Design and Construct a 10mwh Geothermal Plant • Improve Grid and power distribution • Develop an inventory of geothermal resources • Access to concessional loans	• Improve human capacity in geothermal energy • Public Education and advocacy on energy saving • Establish legislation to regulate and harness the export of geothermal energy	• Access viable geothermal resources • Technology to conduct geothermal audits
Energy Efficiency (EE) Programme	• Greater use of energy and efficiency within the public sector and government buildings • Improved energy	• Improve human capacity for energy conservation and audits	• Technology to conduct monitor • Energy Efficiency equipment
Harnessing Solar Energy Resources			
Harnessing Wind Energy Resources			
Harnessing Hydro Power Resources			
Promotion of Green Communities in Support of Health/ Wellness			
Transportation	• 20% reduction in emissions in the transportation sector by 2030 • Increase the use of Electric and Hybrid vehicles	• Greater public awareness and understanding of Electric Vehicles • Establish infrastructure that supports the integration of electric vehicles • Provide incentives that foster the uptake of electric vehicles	
Reduce Emission from Landfill			

Support Received

Dominica has recognised the need for mobilising adequate finance for implementing climate change activities related to the priority sectors namely, energy, agriculture, forestry, transportation, waste management, and tourism as outlined in the Nationally Determined

Contribution (NDC) and the Low Carbon Development Strategy (LCDS). Additionally, support for reporting obligations under the UNFCCC is provided for operational support in fulfilling reporting obligations. These funding arrangements include a combination of Dominica's budgetary allocations/ investments, loans, and grants from multilateral and bilateral entities, and also through private sector investment. Table 9 below outlines financial support received from international sources between 2018 to 2022.

Table 29: Support received 2018–22

Title	Funding Agency	Amount (USD)	Main Sector	Start Date	End Date	Implementing Agency
Emergency Agricultural Livelihoods and Climate Resilience Project	World Bank	28.6M	Agriculture & Resilience	Apr 13, 2018	May 30, 2025	Ministry of Blue and Green Economy, Agriculture, and National Food Security
Dominica Geothermal Risk Mitigation Project	World Bank	41.15M	Renewable Energy	Mar 18, 2019	Feb 28, 2026	Dominica Geothermal Development Company
Disaster Risk Management DPF with Cat DDO	World Bank	Not specified	Disaster Risk Management	Jun 3, 2022	May 6, 2025	Ministry of Finance
Third Phase Disaster Vulnerability Reduction APL for Dominica	World Bank	121.80M	Infrastructure Resilience	May 1, 2014	Jun 30, 2025	Ministry of Public Works, Public Utilities and Digital Economy
Second National Communication to the UNFCCC	GEF	$420,000	Climate Policy & Planning	Not specified	Completed	Gov. of Dominica, UNDP
Blockchain Innovation in the Caribbean	IDB	$177,221	Climate Finance & Technology	2021	2023	CREAD, Dominica Cooperative Societies League Ltd.
Technology Extension Services in Blue Economy	IDB	$25,000	Blue Economy & Services	2021	Ongoing	Not specified
GCF Readiness Support	GCF	Not specified	Climate Finance Readiness	Completed	Completed	UNDP, Government of Dominica
Low Carbon Transport Dominica	GCF	274,417	Transport	2020		Ministry of Economic Affairs, Planning, Resilience, Sustainable Development, Telecommunications and Broadcasting
Enabling Gender-Responsive Disaster Recovery	UK Government, UNDP	Not specified	Gender & Climate Resilience	2019	Ongoing	UNDP, Government of Dominica

Title	Funding Agency	Amount (USD)	Main Sector	Start Date	End Date	Implementing Agency
Low Carbon Development Path	UNDP	Not specified	Energy Efficiency	Not specified	Mar 2021	UNDP, Government of Dominica
Japan Caribbean Climate Change Partnership	Gov. of Japan, UNDP	Not specified	Renewable Energy & Resilience	Not specified	Not specified	UNDP, Government of Dominica
Establishment of National Financing Vehicle	GCF	$286,329	Climate Finance	Sep 24, 2020	Ongoing	GGGI, Ministry of Economic Affairs, Planning, etc.; CREAD

5. Domestic Measurements Reporting and Verification System for Mitigation Actions

5. Domestic Measurements Reporting and Verification System for Mitigation Actions

Measurement, Reporting and Verification

Measurement, Reporting, and Verification (MRV) systems are essential for accurately tracking and enhancing the implementation of mitigation goals and policies outlined in countries' NDC's. MRV's are foundational to the national and global response to climate change and will enable Dominica to meet its international reporting requirements such as National Communications, Biennial Update Reports, and National GHG inventories. The initial phase involves the measurement and monitoring of data and information on greenhouse gas emission estimates, mitigation actions and support received. This is followed by reporting of data collected through the development of national inventories. The final stage involves periodic verification of the data via an independent review and assessment to establish accuracy and reliability. [1]

A recently developed MRV system for the forestry sector will utilise the Collect Earth tool for annual assessments of land use and land-use changes. Reporting will be facilitated through the GHG inventory, which will be updated annually, while verification will be conducted via the UNFCCC REDD+ Technical Assessment. Additionally, an MRV system for HFCs has been established to set a usage baseline, refine emissions estimates, and develop a phase-down strategy. Plans are also underway to create an MRV system for the transportation sector as part of the Low-Carbon Transport Dominica Project.

Monitoring and Evaluation

Dominica is also in the process of developing a Monitoring and Evaluation framework for all climate change adaptation and resilience actions under the Paris Agreement. This will support all projects under the Public Sector Investment Program. A ME framework for the agriculture sector has been developed through the National Agriculture Policy (NAGP), which will facilitate effective management and oversight of its implementation.[2]

This assessment will enhance capabilities in project management, intra- and inter-agency coordination, methodological procedure development, guideline formulation, decision-support tools, stakeholder management, and monitoring and evaluation systems, all aimed at supporting NDC implementation.

Challenges and Opportunities in Dominica's MRV System

Dominica's mitigation efforts face challenges such as limited technical capacity, financial constraints, and vulnerability to extreme weather events, which hinder data collection and coordination among agencies. However, opportunities exist in strengthening partnerships with global climate organisations, enhancing domestic capacity-building, and improving digital infrastructure for real-time emissions tracking. Key strategies include digitalising MRV systems through online platforms and satellite-based monitoring, strengthening quality assurance

[1] The Commonwealth of Dominica updated NDC, 2022, p 19
[2] The Commonwealth of Dominica updated NDC, 2022, p 20

through third-party verification, and expanding local expertise via training programs and a National MRV Task Force. These actions align with sustainable development goals by promoting policy integration, technological advancements, and international collaboration to support the country's energy transition and emissions reduction.

Key Challenges

- Limited technical capacity and financial resources restrict frequent and detailed data collection.
- Vulnerability to extreme weather events disrupts data collection infrastructure.
- Need for stronger institutional coordination among government agencies and stakeholders.
- Regulatory and Policy Gaps – Inconsistent policies may slow down the implementation of mitigation actions and hinder enforcement.
- Public Awareness and Engagement – Limited public understanding of climate change mitigation strategies can affect adoption rates for energy efficiency, waste management, and low-carbon transport initiatives.
- Private Sector Participation – Lack of incentives or financial mechanisms to encourage private investment in renewable energy and sustainable infrastructure.
- Technological Barriers – Limited access to advanced technologies for renewable energy, emissions monitoring, and sustainable land management.
- Data Gaps and Reporting Limitations – Inconsistent data availability and gaps in historical emissions records can affect the accuracy of MRV (Measurement, Reporting, and Verification) systems.
- Dependence on External Funding – Many mitigation projects rely heavily on international financial support, making them vulnerable to shifts in donor priorities.
- Supply Chain Constraints – The importation of specialised equipment and materials for renewable energy and low-carbon transport can be delayed due to logistical challenges.
- Institutional Bureaucracy – Lengthy approval processes and administrative delays can slow down climate action projects, particularly those requiring multi-agency coordination.

Opportunities

- Strengthening partnerships with organisations like UNFCCC, Green Climate Fund (GCF), and Caribbean Climate Change Centre for funding and technical support.
- Enhancing domestic capacity-building efforts to improve MRV expertise.
- Improving digital infrastructure for real-time emissions monitoring and reporting.
- Development of online MRV platforms for streamlined data collection, monitoring, and reporting.
- Integration of real-time emissions tracking systems using satellite-based remote sensing.
- Expansion of third-party verification and independent audits to ensure greater data accuracy.
- Institutionalising MRV governance mechanisms to improve policy integration and enforcement.
- Investment in local training programs to reduce reliance on external experts for MRV implementation.
- Establishment of a National MRV Task Force to oversee mitigation data collection and analysis.

6. Conclusion

6. Conclusion

The Commonwealth of Dominica's Initial Biennial Update Report (BUR1) provides a comprehensive overview of the nation's progress in addressing climate change through mitigation efforts, institutional development, and the establishment of transparent and accountable systems for greenhouse gas (GHG) reporting. As a Small Island Developing State (SIDS), Dominica continues to confront disproportionately high climate risks, including more frequent and intense storms, sea-level rise, and environmental degradation—all of which threaten its economy, ecosystems, and livelihoods.

Despite these challenges, Dominica has demonstrated steadfast commitment to climate action through the integration of climate resilience into national policy and planning frameworks, particularly through the Climate Resilience and Recovery Plan (CRRP), the National Resilience Development Strategy (NRDS), and the Low-Emission Development Strategy (LEDS). These initiatives underscore the country's dedication to becoming the world's first climate-resilient nation.

The GHG inventory presented in this report reveals that while Dominica's total emissions remain relatively low, the energy sector continues to be the primary source of emissions. Conversely, the LULUCF sector provides significant carbon sequestration potential, emphasising the strategic importance of forest conservation. Incremental growth in emissions from the waste sector signals the need for enhanced waste management policies and investment in low-emission technologies.

Dominica's mitigation actions, including renewable energy expansion, reforestation efforts, and sector-specific interventions, highlight the country's proactive stance toward reducing emissions and meeting its Nationally Determined Contribution (NDC) targets under the Paris Agreement. However, these efforts are constrained by financial, technical, and institutional limitations.

To advance its climate objectives, Dominica requires continued international support in the form of climate finance, technology transfer, and capacity-building initiatives. Strengthening data systems, institutional coordination, and legislative enforcement will be key to improving transparency and ensuring sustained progress in climate action.

Ultimately, Dominica's journey toward climate resilience is both ambitious and necessary. The BUR1 reinforces the island's leadership among SIDS in climate adaptation and mitigation and serves as a call for global solidarity. With the right support and collaboration, Dominica can continue to build a sustainable, low-carbon future for its people while contributing meaningfully to global climate goals.