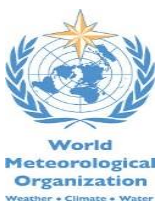




Environment and
Climate Change Canada

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Country Profile: Dominica



1.0 PHYSICAL GEOGRAPHY

The Commonwealth of Dominica is a small Caribbean island state located within the Lesser Antilles, among the Windward Islands in the Eastern Caribbean (UNFCCC 2012; Verret and Berry 2015). It is located between 15° 12' and 15° 39' N Latitude and 61° 14' and 61° 29' W Longitude and is 48 km long and 25 km wide at its widest point, and with an area of 75,000 hectares (UNFCCC 2012).

Dominica has a rugged coastline and lush mountainous interior, is renowned for its pristine natural environment and is proud to call itself the “Nature Island” of the Caribbean (Verret and Berry 2015; UNFCCC 2012). Flat land is limited to coastal areas in the northeast, in river valleys and in certain areas in the centre of the island (UNFCCC 2012). Up to 69% of the island is forested ranging from dry scrub

Climate

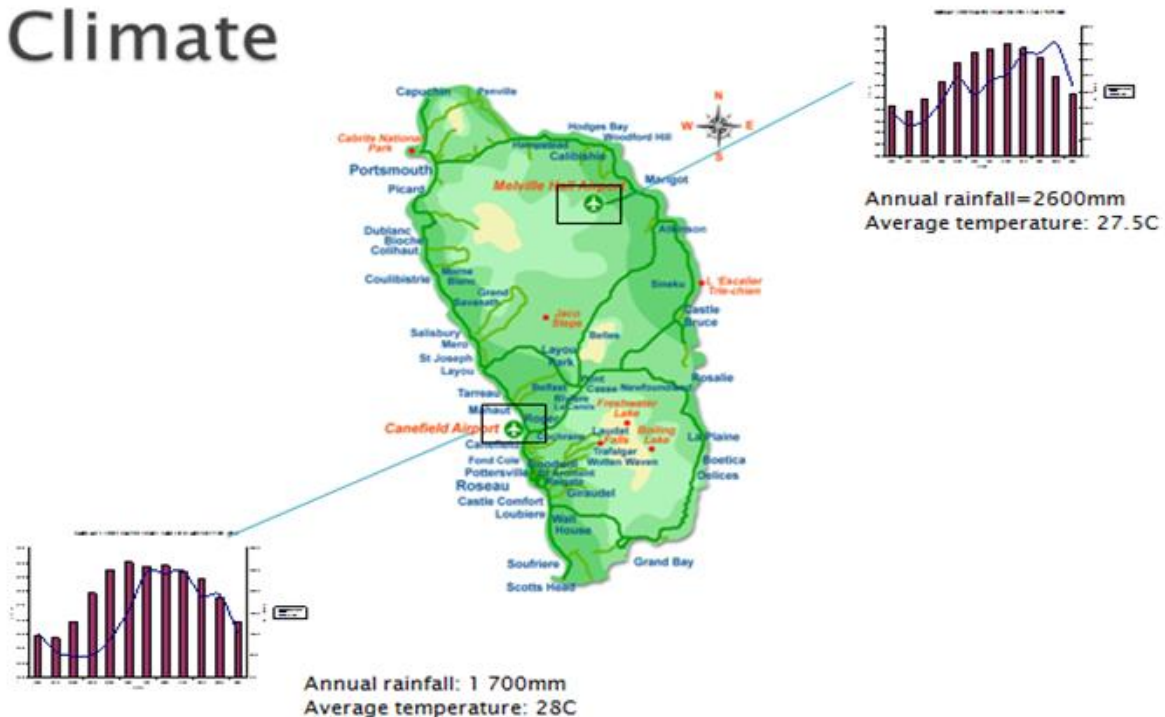


Figure 1 Topographical map and basic climatology of the Commonwealth of Dominica. Source: Dominica Meteorological Services

woodland on the coast to lush, tropical forest in the interior (UNFCCC 2012).

2.0 CLIMATOLOGY

The Dominica Meteorological Service (DMS) maintains two meteorological stations, one at the Canefield Airport and the other at the Douglas-Charles Airport. There are also approximately 9 non-airport automatic stations (eg. Ministry of Agriculture, Forestry Division, DOMEX gauges) that are not under the jurisdiction of the DMS but to which they have access.

The climate of Dominica is classified as “humid tropical marine”, influenced by a combination of its small physical island size, location bordering the Caribbean Sea and the tropical North Atlantic Ocean, and rugged topography. Though all months receive significant rainfall, a wet season can be discerned,

spanning June to November, which coincides with the Atlantic Hurricane Season. The remainder of the year is usually drier (see Figure 2; <http://rcc.cimh.edu.bb/>). Average annual rainfall over the island ranges from just above 2,000 mm (79 in) along the west coast to in excess of 7,620 mm (300 in) in the interior (Dominica Meteorological Services; UNFCCC 2012). The average temperature of Dominica is 27° C and the annual range is small being typically within 3°C. Warmest temperatures occur usually between July and August, where maximum temperatures could exceed 31° C (see Figure 2; Dominica Meteorological Services; UNFCCC 2012; <http://carogen.cimh.edu.bb/>). Minimum temperatures occur in January/February and average about 22° C.

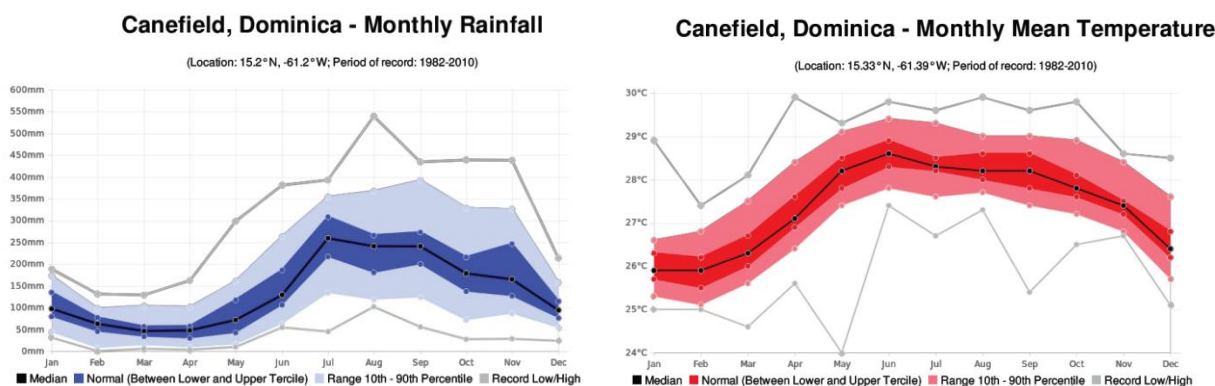


Figure 2 1981-2010 reference climatology of monthly rainfall totals (left) and mean near-surface air temperature (right) at the Canefield airport station. Source: rcc.cimh.edu.bb (data from Dominica Meteorological Services)

Some basic statistics of the rainfall and temperature climatology for the Canefield and Douglas Charles Airport stations are listed in Table 1 below.

Table 1. Summary statistics of rainfall and temperature for the Canefield Airport (1982-2015) in Dominica

Station Name	Canefield Airport (Year/Month of Occurrence)
Mean Annual Rainfall	1764.4 mm (1982-2015)
Wettest year/Month / three month period	2458.5 mm (2011) / 539.4 mm (August 2007) / 1125 mm (July to September 2011)
Driest Year/Month / three month period	1266.1 mm (2000) / 0.4 mm (Feb. 2010) / 41.2 mm (February to April 1987)
Mean Temperature	27.4 °C (1982-2015)
Warmest Year/Month / three month period	28.8 °C (1987) / 29.9°C (April & August 1987) / 29.6 °C (June to August 1987)
Coldest Year/Month / three month period	26.4 °C (2008) / 24°C (May 1993) / 24.9 °C (January to

Source: <http://rcc.cimh.edu.bb/>

3.0 SOCIO-ECONOMIC LANDSCAPE

The population of Dominica was estimated at 72,340 in 2014 (<http://data.worldbank.org/country/Dominica>). The UNDP (2012) Human Development Index (HDI) for Dominica was 0.745 - which puts the country in the high HDI category and positions it at 72 out of 187 countries and territories (UNDP 2013). The 2014 GDP was estimated by the World Bank at USD 524.1 million (USD 7,243/capita). Dominica has slowly diversified its economy over time. However, agriculture remains the dominant sector for the economy (UNFCCC 2011) with substantial aquaculture and manufacturing industries, and more recently, a small but lucrative petroleum industry (UNFCCC 2012).

4.0 KEY NATIONAL STAKEHOLDERS AND THEIR NEEDS

Dominica's first national consultation on climate services in August 2014 brought together over 60 key stakeholders from the National Meteorological Service and key decision-makers from various sectors. In March 2016, Dominica also benefitted from the convening of an Environment Canada supported In-Country Workshop to map provider capacity and user needs for climate services.

A 2015-2016 survey of user climate information needs in the Caribbean captured responses from 14 sectoral users representing a range of sectors including agriculture, water, disaster risk management, health, and tourism sectors. Two representatives from the health and water sectors participated in stakeholder interviews, while no stakeholders participated in focus group discussions convened in May 2016.

Users believe that climate services are of high value in their organisation's operations and planning and as such, they routinely try to integrate climate information considerations into their professional decisions to inform day-to-day strategic planning in their organisations. Agriculture stakeholders use climate information "...in planning and implementation of our watershed and reforestation work programs" and in "...providing farmers with technical advice regarding management practices relevant to the current and upcoming planting/weather season for improved or sustained production..."; while health stakeholders have "...used climate information to assess the impact of climate on health in three priority areas: food quality and availability, water... and vector-borne diseases..."

Users report that the most prominent barrier to climate information use is that the information available is not user friendly. The national Workshop to map provider capacity and user needs for climate information and services further revealed that while sectors such as Agriculture are quite mature in their understanding and use of climate information, other sectors such as tourism have very low levels of awareness and are yet to benefit from a targeted outreach exercise. It was recommended that more work be done on building the capacity of sectoral stakeholders to use climate information. One health stakeholder also stressed the value of the Caribbean Climate Outlook Forums as well as CIMH Workshops in unlocking user understanding of the climate information products. Other recommendations included downscaling of climate information to the local level, increased interactive content, presentation of the socio-economic value of climate information for sectors, presentation of climate variables (eg. humidity) that are important to sectors such as health, provision of integrated

technical products based on interdisciplinary modelling (eg. pest and disease forecasting, how precipitation levels relate to surface and groundwater levels).

5.0 RANGE OF CLIMATE SERVICES

As of August 2015, the Dominica Meteorological Service (DMS) reports that it is a Category 2 climate services provider offering a basic range of climate services and products, as well as, climate predictions. The DMS provides a seasonal outlook (including an ENSO update) via its website, monthly weather summaries and addresses specialized requests for date. In addition, as of January 2016, sectors benefit from a new, generic meteorological bulletin called the Dominica Meteorological Bulletin (http://www.weather.gov.dm/uploads/da_met_vol_1_issue_1_jan-mar2016.pdf). This monitoring and forecast product which has not been tailored to any specific sectoral context is produced on a quarterly basis. There are no institutionalised agreements for the co-production of specific climate services with sectors. However, in the past, the DMS has offered the agricultural sector a tailored product - a monthly Agro-Meteorological Bulletin - which has been produced since April 2012 (http://weather.gov.dm/agro_bulletin.php). This Bulletin is disseminated through: 1) the Met Service website, 2) is emailed to agricultural extension officers, 3) is hand-delivered to farmers, and 4) is sometimes placed at sales outlets where farmers buy supplies. This product is co-developed with the Ministry of Agriculture with the Ministry usually providing an overview of farming activity over the period of the Bulletin. If there was excess rainfall over the month, the Bulletin will describe how this may have affected farming over the period. Then, based on the forecast that is provided in the Bulletin, recommendations are made to farmers regarding best practices that should be employed over the coming period. The DMS also produces a monthly summary of data from both the Douglas-Charles and Canefield stations that is sent to the Ministry of Agriculture. Additionally, the DMS has also been involved in agricultural forums co-hosted by the DMS and the Ministry of Agriculture which are usually conducted annually.

Dominica hosted its first national consultation on climate services in August 2014 and it was determined that health would be a key focus for the country going forward. A draft report on Climate and Health Vulnerability and Adaptation Assessment for Dominica has been developed with the finalized Report expected to be launched at the 2016 Wet/Hurricane Season Caribbean Climate Outlook Forum, which will be hosted by Dominica in May 2016. This work represents a collaborative research effort between the DMS, Dominica Ministry of Health and Environment, the Pan American Health Organization, the World Meteorological Organization, Health Canada and the Caribbean Institute of Meteorology and Hydrology.

The country is yet to host a National Climate Outlook Forum (NCOF).

DMS recommendations to improve its climate services capability include:

- 1) Policy-maker buy-in;
- 2) Increased resources (human and otherwise);
- 3) Training and technical assistance for Met Service staff;
- 4) The establishment of relationships with research partners such as the Dominica State College;
- 5) An increase in hardware and software;
- 6) Have the various sectors indicate their needs and provide necessary thresholds, definitions and baseline information;

- 7) Provision of necessary equipment for sectors to access and analyse data;
- 8) Better collaboration including the free exchange of data between the Met Service and sectors;
and
- 9) Capacity building of Met Service staff to interact with sectors.

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