Country Profile:

Dominican Republic

1. PHYSICAL GEOGRAPHY

The Dominican Republic occupies the eastern two-thirds of the island of Hispaniola it shares with Haiti. At 48,921 sq. km, it is the second largest country in the Caribbean, after Cuba. The geography of the Dominican Republic is greatly diverse, ranging from arid semi-desert plains, to lush valleys, to tropical rain forests with 27 different climatic zones. The Dominican Republic consists of a diverse range of highland and lowland areas, offshore islands, rivers and lakes. About 80% of the country is mountainous. There are five mountain ranges that run through the country. The Cordillera Central, the runs through the center of the country, is the highest mountain range on the island, and includes Pico Duarte, the highest mountain in the Caribbean, at 3087 meters (10,128 feet). The Cordillera Central is home to the four highest peaks in the West Indies: Pico Duarte (3,087m), La Pelona (3,085m), La Rucilla (3,049m) and Pico Yaque (2,760m). Four major rivers drain the numerous highland areas of the Dominican Republic. Lago Enriquillo is 40m below sea level and the lowest point in the West Indies. Other than this, the Dominican Republic is not blessed with many natural lakes. There are a number of islands apart from the mainland, but the two largest offshore islands are Saona and Beata: the former lies off the southeastern coast and the latter off the southern tip of the Pedernales Peninsular.

Figure 1 Map of the Dominican Republic. (Credit: Wiki Commons)

2. CLIMATOLOGY

The Dominican Republic has a moderate, relatively mild tropical climate, although it lies well within the tropical zone. The annual mean temperature is 25 °C; regional mean temperatures range from 21 °C in the heart of the Cordillera Central to as high as 28 °C on the coastal plains. Temperatures rarely rise above 35 °C, and freezing temperatures are unknown. The heaviest precipitation is in the mountainous northeast (the windward side of the island), where the average annual rainfall is more than 100 inches (2,540 mm). As the trade winds pass over the country, they lose their moisture on various mountain slopes, so that the far western and southwestern valleys, along the Haitian border, remain relatively dry, with less than 30 inches (760 mm) of annual precipitation. The northwestern and southeastern extremes of the country are also arid. The capital Santo Domingo receives, on average, 1546.4 mm of rainfall per year (http://carogen.cimh.edu.bb/). In the west and east of the country stations at Jimani and Bayaguana, respectively show two different rainfall climates. Jimani in the west with two rainfall seasons peaking in May and September; and Bayaguana in the east with one wet season peaking in May.

JIMANI, Dominican-Rep - Monthly Rainfall
(Location: 18.48°N, -71.63°W; Period of record: 1981-2010)

BYAGNA, Dominican-Rep - Monthly Rainfall
(Location: 18.7°N, -69.63°W; Period of record: 1981-2010)

Median ▇ Normal (Between Lower and Upper Tercile) ▇ Range 10th - 90th Percentile ▇ Record Low/High
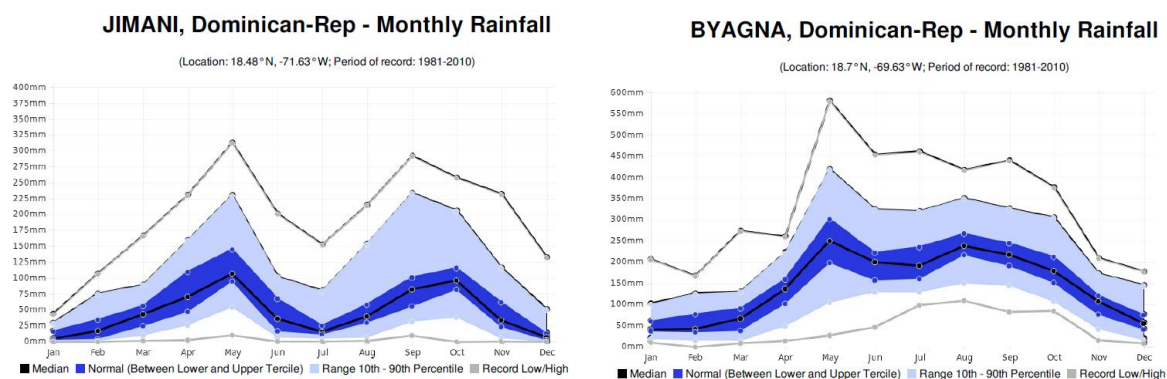
Figure 2 1981-2010 reference climatology of monthly rainfall totals for Jimani in western and Bayaguana in eastern Dominican Republic. Source: rcc.cimh.edu.bb and carogen.cimh.edu.bb (Data from Oficina Nacional de Meteorología, Dominican Republic)

Table 1. Summary statistics of rainfall and temperature for West and East Dominican Republic

Station Name	Jimani (Period/Year/Month of Occurrence)	Bayaguana (Period/Year/Month of Occurrence)
Mean Annual Rainfall	706.6 mm (1979 -2015)	1876.0 mm (1979 -2015)
Wettest Year / Month / three-month period	1084 mm (2007)/345.8mm (May 2011)/ 574.4 mm (Sep to Nov 2007)	2794.3 mm (1979) / 723.6 mm (Aug 1979) / 1348.5 mm (Jul to Sep 1979)
Driest Year / Month / three-month period	292.9 mm (2013) / 0 mm (on multiple occasions) / 0.9 mm (Dec to Feb 2006)	1330.3 mm (2015) / 0 mm (on multiple Feb) / 45.8 mm (Jan to Mar 1977)

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

3. SOCIO-ECONOMIC LANDSCAPE

The Dominican Republic has a population of about 10.792 million (IMF 2015). A 2014 HDI of 0.715, positions the country at 101 out of 187 countries and territories (UNDP 2015, http://hdr.undp.org/en/composite/trends). The (2015) GDP was estimated by the World Bank at USD 67.10 billion, and a GNI of USD 6,130 per capita (http://data.worldbank.org/country/dominican-republic). Mean life expectancy is 73.5 years. Driven by construction, manufacturing and tourism, the Dominican Republic has one of the most rapidly growing economies in the Latin America and Caribbean region since 1992. Unfortunately, welfare development had not kept pace with the growing economy until recently. The agriculture industry continues to have significant social importance, accounting for 14.5% of the labour force, though contributing only 6.2% of the GDP.

4. KEY NATIONAL STAKEHOLDERS AND THEIR NEEDS

To date, no information has been collected on the key user groups in the Dominican Republic and their climate information needs. This signals that a targeted future research intervention may be needed to address this critical data gap.

5. RANGE OF CLIMATE SERVICES

As of November 2015, the Dominican Republic National Meteorology Office (ONAMET) classified itself as a Category 3 climate services provider offering a comprehensive range of climate data services and information products including specialized climate products and decadal climate prediction. ONAMET reports that it has been delivering climate information for over 10 years. The organisation tailors 3 of the 7 regional climate products for the national context[1]. The products are used to prepare agro-meteorological and hydro-meteorological information, as well as, general weather and climate forecasts by sub-region.

The sectors that currently benefit from climate services in Dominican Republic are the agriculture, water, disaster risk management (DRM), energy, tourism sectors. Civil aviation and the navy are also climate information beneficiaries. The ONAMET believes that the education, forestry and health sectors can also benefit from the provision of climate services in the future. The level of interaction between the organisation and the users of climate information has been reported to be low and feedback is not routinely collected from users.

The ONAMET has not yet convened a National Climate Outlook Forum (NCOF).

ONAMET recommendations for improving its climate services capability include:

1. Training and capacity building (particularly work experience) to learn advanced climatology techniques and applications;
2. Periodically hold meetings with those who perform quality checks to verify the results;
3. Have periodic reviews to update user data requirements;
4. Establish a cross-sectoral research group to conduct inter-disciplinary research;
5. Establish more routine user interactions (every 15 days);
6. Establish and use social media (eg. facebook, Instagram) to communicate with all users; and
7. Inter-institutional lesson sharing regarding best practice in the development and delivery of climate services.

6. REFERENCES

International Monetary Fund (IMF) (2015)
http://www.imf.org/external/pubs/ft/weo/2015/01/weodata/weorept.aspx?pr.x=87&pr.y=3&sy=2015&ey=2015&scsm=1&ssd=1&sort=country&ds=.&br=1&c=263%2C243&s=LP&grp=0&a=

Web Sites
http://www.hispaniola.com/dominican_republic/info/nature_georaphy.php
http://www.worldatlas.com/webimage/countrys/namerica/caribb/dominicanrepublic/doland.htm
http://www.infoplease.com/country/dominican-republic.html

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[1] These are the Caribbean Standardised Precipitation Index (SPI) Outlook, the Caribbean Drought Bulletin and the CariCOF precipitation outlook.

http://geography.about.com/library/cia/blcdominican.htm
http://www.thedominicanrepublic.net/geography_location.htm
https://www.britannica.com/place/Dominican-Republic
http://carogen.cimh.edu.bb/
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