Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

Country Profile

Aruba

1. PHYSICAL GEOGRAPHY

Aruba is an island country in the southern Caribbean Sea, located at 12.52°N Latitude and 69.97°W Longitude. It is about 1,600 kilometres (990 miles) west of the Lesser Antilles and 29 kilometres (18 miles) north of the coast of Venezuela. Aruba has a total land area of 193 sq. km. It measures 32 kilometres (20 mi) long from its northwestern to its southeastern end and 10 kilometres (6 mi) across at its widest point. Together with Bonaire and Curaçao, Aruba forms a group referred to as the ABC islands (https://en.wikipedia.org/wiki/Economy_of_Aruba), which, together with Venezuela's islands, form part of the Leeward Antilles. .

Figure 1 Map of Aruba. (Credit: Wiki Commons)

With respect to climate, temperatures are fairly constant throughout the year averaging about 28.1°C. The wet season spans October to December each year with a mean annual total of just about 470 mm. The remainder of the year is mostly dry. As a result of high temperatures, relatively strong winds and an abundance of sunshine, potential evapotranspiration greatly exceeds rainfall. As a result, Aruba's climate is semi-arid to arid. Aruba's soils are nutrient poor and no substantial, natural freshwater reservoirs occur, with groundwater being mostly brackish. As a result, xerophile vegetation naturally occurs, consisting of e.g. cacti and succulents.

2. CLIMATOLOGY

Meteorological needs of Aruba are served by the Departmento Meteorologico Aruba (http://www.meteo.aw/). Aruba has a climatological station at the Queen Beatrix International Airport and rainfall data logger at this station (12°30'N, 70°W). Table 1 below summarizes the rainfall and temperature climatology for Aruba.

The rainfall and temperature climatology at Queen Beatrix International Airport (1981-2010) are presented in Figure 2, with summary statistics presented in Table 1. As a relatively flat and small island off the coast of Venezuela, annual precipitation totals are low. This is primarily due to upwelling of cooler ocean waters. The rainy season sometimes starts in September, usually peaks between October and December (with each month boasting more than 50 mm of rainfall on average), and sometimes lasts into January. Variability in absolute terms is quite low, but in relative terms is great from September through to December, when it peaks (the 10th percentile and 90th percentile are about 25 mm and 195 mm, respectively). Part of the increased variability during this season is because of the sporadic incurrence of tropical cyclones. The annual temperature range is between 26.7°C in January and 29.2°C in September.
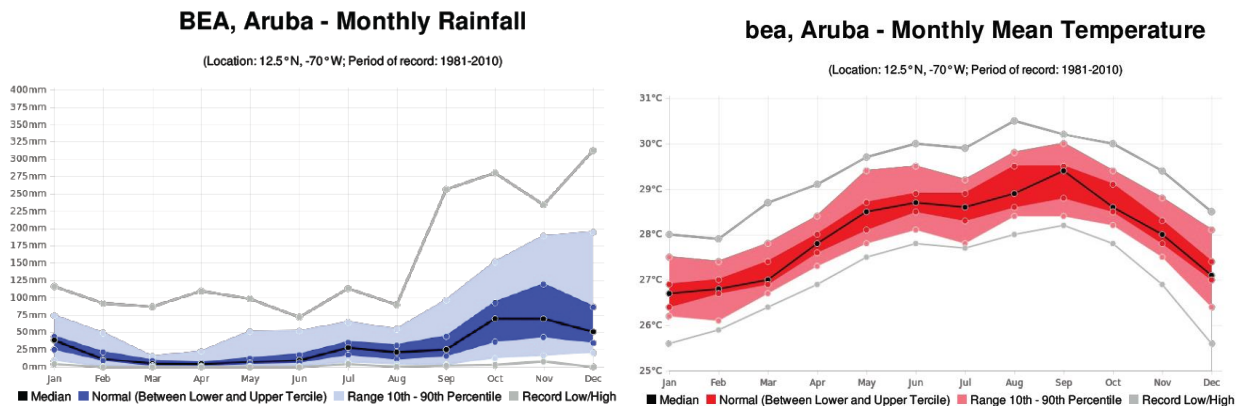

Figure 2 1981-2010 reference climatology of monthly rainfall totals (left) and mean near-surface air temperature (right) at the Queen Beatrix airport station. Source: rcc.cimh.edu.bb (data from Departamento Meteorologico Aruba)

Table 1. Summary statistics of rainfall and temperature for the VC Bird International Airport in Antigua

Station Name	VC Bird International Airport (Year/Month of Occurrence)
Mean Annual Rainfall	457.9 mm (1971-2015)
Wettest year/Month / three month period	907.8 mm (2004) / 312.2 mm (Dec. 1999) / 563.4 mm (Nov. 1999 to Jan. 2000)
Driest Year/Month / three month period	134.2 mm (2015) / 0 mm (18 occasions) / 1.2 mm (Feb. to

	Apr. 1987)
Mean Temperature	28 °C (1971-2015)
Warmest Year/Month / three month period	28.9 °C (1998) / 30.5°C (Aug. 1998) / 30.1 °C (June to Aug. 2010)
Coldest Year/Month / three month period	26.9 °C (1974) / 25°C (Jan. 1974) / 25.3 °C (Dec. 1973 to Feb. 1974)

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

3. SOCIO-ECONOMIC LANDSCAPE

Aruba had a (2014) population estimated by the World Bank at 103,400 (http://data.worldbank.org/country/aruba). The World Bank also estimated its (2014) GDP at USD 2.584 billion giving the island a high per capita GDP of USD 25,354. The main economic activities in Aruba are Tourism, oil refining and storage, as well as offshore banking. But, tourism accounts for the greatest share of the island's income. Although Aruba's poor soil and low rainfall limit its agricultural prospects, aloe cultivation, livestock, and fishing contribute to Aruba's economy. In addition, the country also exports art and collectibles, machinery, electrical equipment, and transport equipment (https://en.wikipedia.org/wiki/Economy_of_Aruba).

4. KEY NATIONAL STAKEHOLDERS AND THEIR NEEDS

To date, no user responses have been collected from sectoral stakeholders in Aruba. This represents a critical data gap that may require a targeted future intervention to address.

5. RANGE OF CLIMATE SERVICES

The Aruba Meteorological Services (DMA) has classified itself as a Category 1 climate services provider offering a basic range of climate data services and information products. The organization has been delivering climate information for over 10 years. The DMA tailors 3 of the 7 regional climate products to their national context[1]. The products are used to prepare the national seasonal temperature, rainfall and drought outlooks.

The socio-economic sectors that benefit from climate services in Aruba are the agriculture, health and tourism sectors. No data is available regarding specific organisations with which the DMA interacts. The DMA believes that the general public can also benefit from the provision of climate services.

The level of interaction between the DMA and climate information users has been reported to be moderate where users are not engaged at later stages in the climate service project. However, feedback is not routinely collected from users. Aruba is yet to convene a National Climate Outlook Forum.

The DMA recommends "more training for qualified personnel" for improving its climate services capability.

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[1] These products include the CariCOF precipitation, temperature and droughts outlooks.

6. REFERENCES

World Bank 2015. Worldwide Governance Indicators Country Data Report for Aruba, 1996-2014.

Web Sites

http://www.meteo.aw/   :
http://carogen.cimh.edu.bb/
http://rcc.cimh.edu.bb/
https://en.wikipedia.org/wiki/Geography_of_Aruba
http://data.worldbank.org/country/aruba