

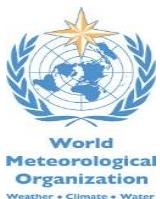


Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

Country Profile

St. Maarten



1. PHYSICAL GEOGRAPHY

Sint Maarten (Dutch pronunciation: [sɪnt 'ma:rtə(n)]) is an island country in the Leeward Islands of the Caribbean. It is a constituent country of the Kingdom of the Netherlands. It encompasses the southern 40% of the Caribbean island of Saint Martin, while the northern 60% of the island constitutes the French overseas territory of Saint-Martin. Its capital is Philipsburg. St. Maarten is centred on 18° 01' N Latitude and 63° 05' W Longitude. The island hinges between the Lesser and Greater Antilles and lies between the Atlantic Ocean and the Caribbean Sea. Other neighbouring island territories include Anguilla, St. Kitts and Nevis and St. Barthélemy. The total land area of the entire island is 90 km² (15km long and 13 km wide at its widest point) (<http://www.meteosxm.com/about-us/>). The island features a series of jagged ranges of hills from north to south terminating at Pic Paradis, 424 m the highest point, on the French side of the island.



Figure 1 Map of St. Maarten, comprising the southern part of the island of St. Martin. (Credit: Wiki Commons)

The climate is tropical marine and the islands experience the year round warm and humid conditions. The annual average rainfall totals 1160 mm near sea level, and higher amounts in upland areas. The wet season occurs through May to November (peaking between September and November. (<http://rcc.cimh.edu.bb/>). Mean annual temperature is 27.3°C, being 3.2°C cooler in February as compared to September (<http://www.meteosxm.com/>, rcc.cimh.edu.bb). Rainfall supports dry forest in the higher elevations.

2. CLIMATOLOGY

The Meteorological Department St. Maarten (<http://www.meteosxm.com/>) sited at the Princess Juliana International Airport (18° 02'N, 63° 06' W) monitors three weather stations - one automatic weather station at this airport and rainfall stations located at the Aéroport Grand Case and Marigot on the French side of the island. Summarized rainfall and temperature climatology (1971-2015) for the Princess Juliana airport station (TNCM) in St. Maarten are given in Table 1.

The rainfall temperature climatology at Princess Juliana International Airport (TNCM station) (1981-2010) are presented in Figure 2, with summary statistics presented in Table 1. As a relatively small and low-lying island relative to the Windward Islands or Guadeloupe, annual precipitation totals are generally similar to the surrounding Leeward Islands. May can in some years be relatively wet (with the 90th percentile around 250 mm), while both the average as the extremes increase to peak in October and November (with the median being more than 100 mm and the 90th percentile above 250 mm). The annual temperature range is between 25.5°C in February and 28.7°C in September, which makes the amplitude of the seasonal cycle fall near the median of Caribbean locations.

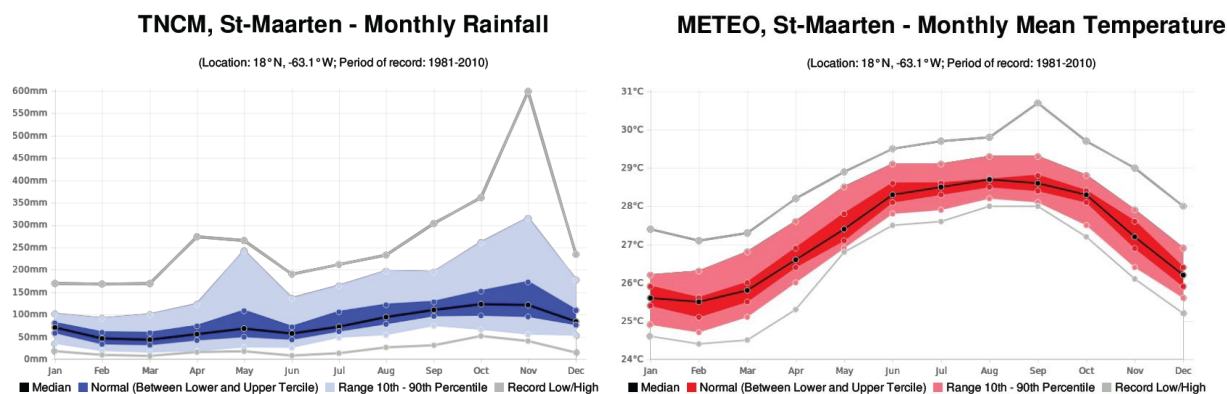


Figure 2 1981-2010 reference climatology of monthly rainfall totals (left) and mean near-surface air temperature (right) at the Princess Juliana airport station. Source: rcc.cimh.edu.bb (data from Meteorological Department St. Maarten)

Table 1. Summary statistics of rainfall and temperature for the Princess Juliana International Airport (TNCM station)

Station Name	TNCM (Year/Month of Occurrence)
Mean Annual Rainfall	1097.4 mm (1971 – 2015)
Wettest year/Month / three month period	1758.2 mm (2003) / 598.8 mm (Nov. 1999) / 972.2 mm (Oct. to Dec. 2003)
Driest Year/Month / three month period	495.4 mm (2015) / 3.1 mm (June. 2012) / 59 mm (Apr. to Jun. 1995)
Mean Temperature	27.1 °C (1971-2015)

Warmest Year/Month / three month period	28.6 °C (1998) / 30.7 °C (Sep. 2003) / 30 °C (Aug. to Oct. 1998)
Coldest Year/Month / three month period	26.2 °C (1975) / 24°C (Jan. & Feb. 1976) / 24 °C (Jan. to Mar. 1976)

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

3. SOCIO-ECONOMIC LANDSCAPE

St. Maarten has a population of about 37,329 (Ministry of VROMI and TEZVT2014; <http://www.tt.undp.org/>) on 34 sq km and is deemed very densely populated with 1100 persons per Sq. km. The GDP per capita is reported at USD15, 400 (<http://www.indexmundi.com/>). Tourism is the most important economic sector both in terms of its contribution to GDP (80%), foreign exchange revenue accounting for up to 82.5% of the islands exports. More than 2 million tourists (almost 1.8 million cruise ship passengers and 467.000 stay over (2013)) visit the shores of Sint Maarten per year ((Ministry of Vromi and Tezvt, 2014).

4. KEY NATIONAL STAKEHOLDERS AND THEIR NEEDS

A 2015-2016 survey of user climate information needs in the Caribbean captured responses from 1 user representing the health sector in St. Maarten. No representatives from St. Maarten participated in interviews or focus group discussions in 2016. This very small sample size may reflect the limitations of the St. Maarten's size, population and the potential market for the delivery and use of climate services. However, it may also signal that a targeted future research intervention may be needed to address this critical data gap.

The survey respondent reported that they obtain their seasonal climate forecasts from government agencies, departments and research institutes. The seasonal climate forecast information is used to help inform and manage the day-to-day operational activities and also to inform strategic planning on a daily basis. This health stakeholder values climate information such as "drought/heat wave data for planning and coordinated response for activities especially during the carnival season...as well as the wet days outlook for better planning and response in flood prone areas".

The user reported a lack of knowledge of climate data, an inappropriate level of data offered by climate information to support organisational decisions and a lack of in-house expertise to use the information as barriers to the use of climate information.

5. RANGE OF CLIMATE SERVICES

The Meteorological Department St. Maarten (MDS) classified itself as a Category 1, which offers a basic range of climate data services and information products. The MDS has been delivering climate information for 1-3 years. The organisation tailors 6 of the 7 regional climate products for the national context¹. The products are used to prepare the monthly Weather and Climate Newsletter.

¹ These are the Caribbean Standardised Precipitation Index (SPI) Outlook, the Caribbean Drought Bulletin, CariCOF Climate Outlook Newsletter, CariCOF Precipitation, Temperature and Drought Outlooks.

The socio-economic sectors that benefit from climate services are the Disaster Risk Management, health and tourism sectors. The MDS specifically interacts with the Ministry of Public Health, Social Development and Labour². The MDS believes that the NGO community (e.g., The Nature Foundation who are involved in coastal, marine and wildlife preservation) could benefit from the provision of climate services in the future.

The level of interaction between the MDS and climate information users has been reported to be low and feedback is not routinely collected from users. St. Maarten is yet to convene a National Climate Outlook Forum.

MDS recommendations for improving its climate services capability include:

1. An increased network of stations across the island to improve data coverage;
2. Recruitment of necessary staff to perform specialised tasks for more targeted delivery of climate services. More specifically, meeting the basic staffing needs of the climate division and having a dedicated staff core for research;
3. Having a long-term research strategy that is sufficiently funded;
4. More interaction with users to find out usefulness of products generated and to understand users' needs; and
5. Implementing planned upgrades to their website (under construction) which will help to improve interaction and obtain feedback from users.

6. REFERENCES

Ministry of VROMI and TEZVT 2014. Government of Sint Maarten - National Energy Policy of Sint Maarten. [Authors Erika Radjouki and Claire Hooft raafland) April 2014

Transparency International. 2015. National Integrity System Assessment

Web Sites

<http://carogen.cimh.edu.bb/>

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

<http://www.meteosxm.com/>

<http://www.tt.undp.org/>

http://www.indexmundi.com/sint_maarten/gdp_per_capita_ppp.html

² Information gleaned from participant lists from 6 regional meetings, namely: 1) the 2014 Wet Season CariCOF, May 2014; 2) the 2014 Dry Season CariCOF, November 2014; 3) the 2015 Wet Season CariCOF, May 2015; 4) the 2015 Dry Season CariCOF, November 2015; 5) the Workshop on Enhancing Climate Indices for Sector-specific applications in the Caribbean, 15-19 February, 2016; and 6) the 2016 Wet Season CariCOF, May 2016.