



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

Country Profile:

Suriname

1. PHYSICAL GEOGRAPHY

Suriname (Dutch pronunciation: [sy:ri'na:mə], officially known as the Republic of Suriname (Dutch: Republiek Suriname, is a sovereign state on the northeastern Atlantic coast of South America. At just under 165,000 km² (64,000 sq mi), it is the smallest country in South America. Suriname's population of approximately 566,000 mostly inhabits the country's north coast, in particular in and around the capital and largest city, Paramaribo. Situated on the Guiana Shield, it lies mostly between latitudes 1°N and 6°N, and longitudes 54°W and 58°W. It is bordered by French Guiana to the east, Guyana to the west and Brazil to the south. The northern, lowland coastal area (roughly above the line Albina-Paramaribo-Wageningen) has been cultivated, and most of the population lives here. The southern part consists of tropical rainforest and sparsely inhabited savanna along the border with Brazil, covering about 80% of Suriname's land surface.



Figure 1 Map of Suriname. (Credit: Wiki Commons. Source: CIA World Factbook)

The climate is equatorial in coastal areas, tropical monsoon further inland and tropical savannah in the south-western-most portions of the country, with the country experiencing year round hot and humid conditions. In coastal areas, the annual average rainfall totals between 1600 mm in Nickerie and around 2300 mm. The main wet season occurs from April to July, with a secondary, shorter wet season centred on December-January (<http://carogen.cimh.edu.bb/>). Mean annual temperature is around 27.5°C in coastal areas, being 2.5°C cooler in January as compared to September (<http://rcc.cimh.edu.bb/>), similar to other areas in the southern Caribbean, though with distinctly weaker cooling breezes, increasing heat sensation. Rainfall supports equatorial rainforest in much of the country.

2. CLIMATOLOGY

The Meteorologische Dienst Suriname (<http://www.meteosur.sr/>) sited at the Princess Juliana International Airport (18° 02'N, 63° 06' W) monitors observations from well over 200 stations and rain gauges. For climate analysis and prediction, the best station is Zanderij, of which summarized statistics of rainfall and temperature climatology (1971-2015) are given in Table 1.

The rainfall ((1971-2015) and temperature (1981-2010) climatology at the Zanderij station are presented in Figure 2, with summary statistics presented in Table 1. As a comparatively large and mostly low-lying country, characterised by estuarine plains annual precipitation totals are generally similar to neighbouring Guyana and French Guiana. Any month can see precipitation sums exceeding 200 mm, while only May, June and July rainfalls only very rarely total less than 100 mm each. April is the most variable month in terms of rainfall totals (with the 10th percentile being around 90 mm and the 90th percentile around 410 mm). From August till November, i.e. the long dry season, none of the months have recorded over 300 mm, but all other months have. The annual temperature range is between 26.4°C in January and 28.9°C in September, which makes the amplitude of the seasonal cycle fall below the median of Caribbean locations. This is in accordance with its equatorial location.

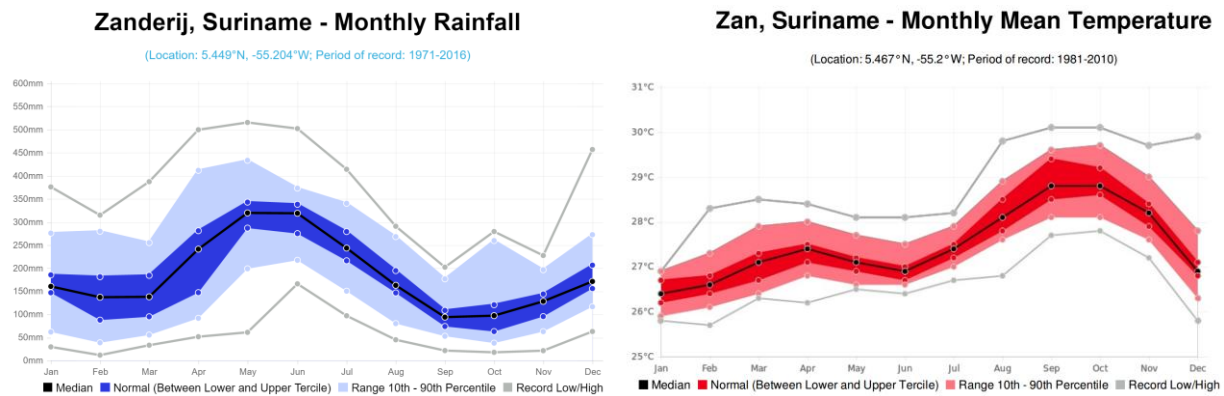


Figure 2 1971-2015 climatology of monthly rainfall totals (left) and 1981-2010 reference climatology of monthly mean near-surface air temperature (right) at the Zanderij station. Sources: carogen.cimh.edu.bb and rcc.cimh.edu.bb (data from Meteorologische Dienst Suriname)

Table 1. Summary statistics of rainfall and temperature for the Zanderij station

Station Name	Zanderij (Year/Month of Occurrence)
Mean Annual Rainfall	2246.7 mm (1971 – 2015)
Wettest year/Month / three month period	2720.2 mm (2013) / 515.5 mm (May 2013) / 1252.1 mm (Apr. to Jun. 1994)
Driest Year/Month / three month period	1756.6 mm (1998) / 11.6 mm (Feb. 1971 & Feb. 1979) / 115.4 mm (Jan. to Mar. 2003)
Mean Temperature	27.5 °C (1971-2015)

Warmest Year/Month / three month period	28.5 °C (1987) / 30.6 °C (Oct. 1976) / 30 °C (Aug. to Oct. 1987)
Coldest Year/Month / three month period	26.8 °C (1971) / 25.0°C (Jan. 1972) / 25.6 °C (Jan. to Mar. 1971)

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

3. SOCIO-ECONOMIC LANDSCAPE

Suriname is an upper middle income country and was one of the Caribbean’s best performing economies over the last decade, largely due to its rich endowment in natural resources and biodiversity. With an average annual GDP growth of 4.5 percent between 2004 and 2014, the per capita income of its population amounted to US\$9,950 (<http://www.worldbank.org/en/country/suriname/overview>).

Suriname’s economy is highly concentrated in the extractive industries (gold, oil, and bauxite), which have played a key role in driving growth and revenues. While high commodity prices have benefited Suriname for several years, reliance on natural resource revenues exposes the country to commodity price fluctuations. In addition, Suriname is highly vulnerable to climatic disasters, especially flooding due to rising sea levels, excess rain fall, and recently high force winds (<http://www.worldbank.org/en/country/suriname/overview>). Agriculture, especially rice and bananas, remains a strong component of the economy, and ecotourism is providing new economic opportunities.

4. KEY NATIONAL STAKEHOLDERS AND THEIR NEEDS

A 2015-2016 survey of user climate information needs in the Caribbean captured responses from 1 representative from the health sector in Suriname. In addition, only 1 stakeholder from the health sector participated in focus group discussions in 2016. This very small sample size may signal that a targeted future research intervention may be needed to address this critical data gap.

The survey respondent obtains climate information from the local NMHS. Climate information is used to help inform and manage the day-to-day operational activities and also to inform strategic planning on a daily basis. The FGD participant noted that climate information is “used to develop plans for indigenous communities where their livelihoods were being impacted by the severe drought”.

Users report that they need more exposure and training to build their capacity to integrate climate information considerations into professional decisions.

5. RANGE OF CLIMATE SERVICES

The Suriname National Meteorological Service (SNMS) has classified itself as a Category 2 climate services provider offering a basic range of climate services and products, as well as, climate predictions. The organisation tailors 5 of the 7 regional climate products for the national context¹. Climate information available at the national level includes daily and monthly rainfall tables, annual rainfall reviews, and a monthly Climate Bulletin. The Service has been delivering climate information over 10 years.

¹ These are 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 agriculture, water, disaster risk management, health, energy and tourism sectors. The SNMS specifically interacts with the Ministry of Health and the Ministry of Agriculture, Animal Husbandry and Fisheries². The SNMS convened their first National Climate Outlook Forum in September 2015. The level of interaction between the SNMS and climate information users has been reported to be moderate, however feedback is not routinely collected from users.

SNMS recommendations for improving its climate services capability include:

1. Expansion of the observation stations network to facilitate a wider spread of climatological data coverage;
2. Recruitment of qualified personnel to support the climate services portfolio;
3. Training and capacity building of staff;
4. Further research to identify climate trends, variability and changes;
5. Improvement of the monthly Climate Bulletin to include more climate information (eg. the number of wet days, dry spells, Standard Precipitation Index, as well as synoptic data such as monthly tables such as humidity, temperature, air pressure, wind velocity etc.)
6. Production of tailored products that meet the users' needs; and
7. Improving communication modes to the public.

6. REFERENCES

Meteorologische Dienst Suriname (<http://www.meteosur.sr/>)

World Bank – Suriname's country profile. 2016. (<http://www.worldbank.org/en/country/suriname>)

Web Sites

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

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

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.