



Environment and  
Climate Change Canada

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# Country Profile: St. Kitts and Nevis

## 1. PHYSICAL GEOGRAPHY

St. Kitts and Nevis is a twin island Federation located in the northern part of the Lesser Antilles chain of islands in the Eastern Caribbean (UNFCCC 1994). St. Kitts is located at 17° 15' N Latitude and 62° 45' W Longitude and Nevis is located three (3) km to the southeast at 17° 10'N Latitude and 62° 35' West Longitude. St. Kitts and Nevis has a total land area of 269 Sq. km with St. Kitts, the larger of the two islands accounting for 176 sq. km (65% of the land area). The islands are volcanic and are characterized by three volcanic centres (Central Northwest, Middle range, and Southern Range). The highest point Mr. Liamuiga is located in the central northwest ranges and rises with a pronounced crater to 1,156 m (UNFCCC 1994).



Figure 1 Map of St. Kitts and Nevis. (Credit: Wiki Commons)

The climate of the Federation of St. Kitts and Nevis is classified as tropical marine. The annual mean rainfall totals around 1200 mm at low elevations, and exceeds 3000 mm near the highest summits, with the wet season occurring between May and November (<http://rcc.cimh.edu.bb/>). The annual average ambient temperature is 27.1°C, varying from 25.4°C in February to 28.5°C in August on average. Volcanic soils, combined with ample rainfall, support rainforest at higher elevations. However, due to high evapotranspiration rates, scrub vegetation is more common near sea level.

## 2. CLIMATOLOGY

The Antigua and Barbuda Meteorological Services (<http://www.antiguamet.com/>) has forecasting responsibilities for St. Kitts and Nevis like other members of the Leeward Islands. There is a dedicated webpage ([http://antiguamet.com/Antigua\\_Met\\_files/SKB\\_Fcast.html](http://antiguamet.com/Antigua_Met_files/SKB_Fcast.html)) with forecast information that is updated on a daily basis. The monthly and seasonal climatology for one station in St. Kitts (METEO) is given in Table 1. There are 10 active weather stations in St. Kitts and at least one in Nevis. Details of which are given in table 2.

The rainfall climatology at Robert L. Bradshaw International Airport (RLB Airport) (1981-2010) and temperature climatology at the National Agriculture Station (NAS) (1981-2010) are presented in Figure 2, with summary statistics of rainfall at RLB Airport presented in Table 1. As a relatively small island relative to the Windward Islands or Guadeloupe, annual precipitation totals are generally similar to the surrounding Leeward Islands. April and May can in some years be relatively wet (with the 90<sup>th</sup> percentile around 200 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 90<sup>th</sup> percentile close to 350 mm).

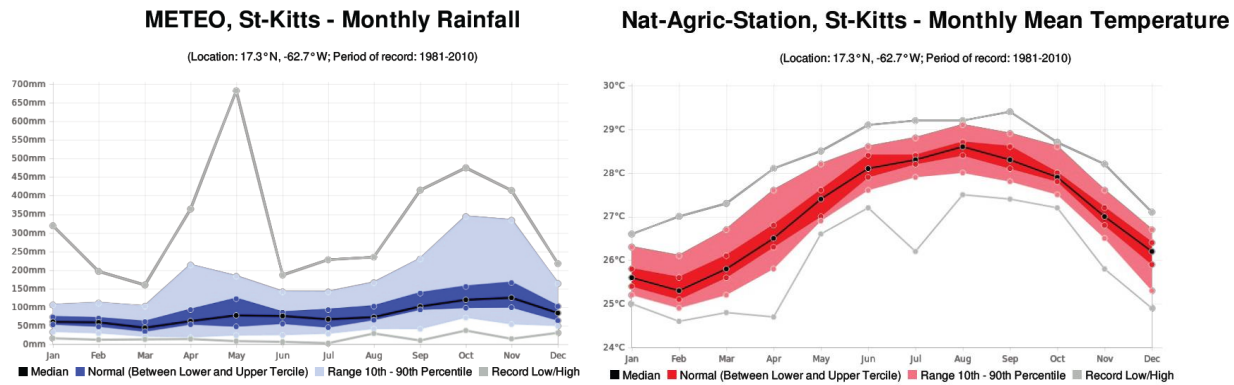


Figure 2 1981-2010 reference climatology of monthly rainfall totals at the RLB airport station (left) and mean near-surface air temperature at the VAS station (right). Source: rcc.cimh.edu.bb (data from St. Kitts Air & Seaports Authority)

Table 1. Summary statistics of rainfall for the Robert L. Bradshaw International Airport and temperature for the National Agriculture Station

Station Name	RLB International Airport / NAS (Year/Month of Occurrence)
<b>Mean Annual Rainfall</b>	1178.1 mm (1972 – 2015)
Wettest year/Month / three month period	1872.4 mm (1979) / 682.2 mm (May. 1987) / 1001.8 mm (Sep. to Nov. 1999)
Driest Year/Month / three month period	687.8 mm (2002) / 3 mm (Jul. 1985) / 36.5 mm (May to Jul. 1985)
<b>Mean Temperature</b>	27.1 °C (1972-2015)
Warmest Year/Month / three month period	27.8 °C (2007) / 29.4 °C (Sep. 2003) / 29 °C (Jul. to Sep. 1998)
Coldest Year/Month / three month period	26.2 °C (1972) / 24.1 °C (Feb. 1972 / Mar. 1976) / 24.2 °C (Jan. to Mar. 1976)

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

### 3. SOCIO-ECONOMIC LANDSCAPE

In 2014 the population of St. Kitts and Nevis was estimated around 54,940 ([http://data.worldbank.org/country/St. Kitts and Nevis](http://data.worldbank.org/country/St._Kitts_and_Nevis)). The country's 2014 HDI of 0.752 is above the average of 0.744 for countries in the high human development group and above the average of 0.748 for countries in Latin America and the Caribbean. This HDI ranks the twin island Federation at 77 out of 188 countries and territories (UNDP 2015). The (2014) GDP was estimated by the World Bank at USD 852.2 million. Tourism is the most important economic sector both in terms of its contribution to GDP, foreign exchange revenue and employment of the labour force.

### 4. KEY NATIONAL STAKEHOLDERS AND THEIR NEEDS

A 2015-2016 survey of user climate information needs in the Caribbean captured responses from 18 sectoral users representing a range of climate-sensitive sectors including the water, agriculture, disaster risk management (DRM), tourism, energy and health sectors, as well as, representatives from other sectors such as forestry, fisheries education and environment. While no users participated in stakeholder interviews, one stakeholder from the DRM sector participated in focus group discussions convened in May 2016.

Users in St. Kitts and Nevis obtain climate information from the National Meteorological and Hydrological Services, government agencies and departments, the Caribbean Institute for Meteorology and Hydrology and research institutes. 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. Users in St. Kitts and Nevis integrate climate information in a number of ways:

- "...help guide decisions in relation to events, operations and the possible impacts climate conditions can have on them. Additionally, climate conditions can have a serious impact on tourism products" (Tourism stakeholder).
- "The CariCOF Outlook prepares the Water Services Department to plan for operations, maintenance, abstraction rates control and systems improvements" (Water stakeholder).
- "The Department of Environment uses the forecast information in their public education outreach programmes. The data is also fed into our national communication to assess vulnerability and adaptation plans" (Environmental Management stakeholder).
- "...fogging, clean-up campaigns, clearing of gullies, streams and other natural water ways in anticipation of flooding or rainy season" (Health stakeholder).

Users called for more exposure and training to build their capacity to integrate climate information considerations into professional decisions.

### 5. RANGE OF CLIMATE SERVICES

As of September 2015, the St. Kitts Meteorological Service/Nevis Meteorological Office has classified itself as being in transition phase, moving from a Category 1 to a Category 2 climate services provider. The St. Kitts Meteorological Service/Nevis Meteorological Office does not tailor any of the regional climate products for the national context.

The socio-economic sectors that benefit from climate services are the agriculture, water, disaster risk management, health and tourism sectors, as well as, environmental personnel. Specific organisations with which the St. Kitts Meteorological Service/Nevis Meteorological Office interacts<sup>1</sup> are:

- The St. Kitts Water Services Department;
- The National Emergency Management Agency;
- The Ministry of Education, Youth, Social and Community Development;
- The St. Kitts and Nevis Ministry of Public Infrastructure, Department of Energy;
- The St. Kitts Tourism Authority;
- The Inter-American Institute for Cooperation on Agriculture, Delegation in St Kitts and Nevis;
- Fire and Rescue Services; and
- The St. Kitts and Nevis Defence Force.

The level of interaction between the Met Service and climate information users is reported to be low and feedback is not routinely collected from users. Moreover, no National Climate Outlook Forum has been convened in St. Kitts and Nevis to date.

Recommendations for improving the climate services capability of the St. Kitts Meteorological Service/Nevis Meteorological Office include:

1. An upgrade of climate software and streamline process between both the St. Kitts and Nevis offices;
2. Ingestion of data from various observing sites across the Federation, instead of just at the Airport;
3. Recruitment of dedicated staff focusing on climate prediction;
4. Establish infrastructure to conduct research;
5. Dedicated staff with expertise to build relationships with and advise stakeholder groups; and
6. Capacity building for both met services, particularly around climate impacts reporting.

## 6. REFERENCES

United Nations Development Programme (UNDP). 2015. Human Development Report 2014. Work for Human Development. Briefing note for countries on the 2015 Human Development Report – St. Kitts and Nevis

### Web Sites

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

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

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

[http://data.worldbank.org/country/St. Kitts and Nevis](http://data.worldbank.org/country/St.Kitts.and.Nevis)

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<sup>1</sup> 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.