

Factsheet

Colombo City in Sri Lanka

Location of the city

Colombo Municipal Council (CMC) is located at 6°56'04"N 79°50'34"E on the west coast, just south of the Kelani River. It is a principal port on the Indian Ocean. It is situated on the island's west coast, close to the Greater Colombo area, which includes Sri Jayawardenepura Kotte.

About the City

Colombo Municipal Council (CMC) is the largest Local Authority in Sri Lanka and one of the oldest in South Asia. It was established in 1865. It caters to around a million population and is also one of the busiest ports in South- Asia. In addition to the CMC, other organisations working in the city are the Electricity Board, National Water Supply and Drainage Board, Urban Development Authority(UDA), Common Amenities Board (CBA), and Community Development Councils (CDC).

From a geographical viewpoint, the Colombo city region has been defined as the Colombo district area, including the Municipal Council (CMC). The Colombo Municipal Council area (CMC) and its adjacent municipalities, 'Dehiwala-Mount Lavinia' and 'Sri Jayawardenepura Kotte' are designated the Colombo Core Area (CCA).

The city consists of six districts for its administrative purposes (<https://www.colombo.mc.gov.lk/admin-districts.php>). These districts are further divided into 47 Colombo Municipal Council (CMC) Wards for their administrative purpose. Colombo is the biggest city in Sri Lanka. It has one of the world's largest artificial harbours and handles most of Sri Lanka's foreign trade.



Map-1 Geographical location of Colombo

Colombo City Demography & Socio-Economic Characteristics

Colombo is the commercial capital and the most populous city in Sri Lanka. It is the island's financial centre and a popular tourist destination. Colombo is the most densely populated city in Sri Lanka with 13364 persons/Km² while the country's average population density is 325 persons/Km² (Ariyawansa, 2009). According to the Colombo Municipal Council, Colombo has a total population of 555,031. The total population of Colombo accounts for approximately 13% of the total population of the country. Furthermore, the city region has a transient population twice as large as the resident population.

The land area of Colombo city is 37 Km² which is 5.4% of the total landmass of Colombo District. Colombo is located in the Western province, which comprises the three major districts of Colombo, Kalutara, and Gampaha. The Colombo Municipal Council area (CMC) and its adjacent municipalities

'Dehiwala-Mount Lavinia' and 'Sri Jayewardenepura Kotte' are designated the Colombo Core Area (CCA). The total land area of the Colombo Core Area is 7,542 hectares (Ariyawansa, 2009). As a metropolis with cosmopolitan qualities, the highest percentage of the country's population residing in the city is a significant problem, and the nature of its frequent demographic structure changes has exacerbated the situation. In terms of socioeconomic, political, and administrative activity, Colombo city is the country's most active and significant city (Ariyawansa, 2009).

Therefore, it is logical to envisage a high population density in the city. Also, the city has a large number of different ethnic groups, which adds to the difficulty of its population and its many different needs. The main ethnic groups in the city are Sinhala, Tamil and Moor etc.

Socio-economic characteristics	
Population	555,031 (as per 2011 census)
Total area	37 Km ²
Density	8,664 persons per sq. km.
Slum Population	177,791 & 44,448 HHs (55%) ¹

Table-1: *Colombo city, Demography*
Source: Colombo Municipal Council

Infrastructure Services Status

The Colombo Municipal Council (CMC) provides the service in the city area. The city has high coverage of electricity (96.5%) and water services (99.7%), having access to safe drinking water and electricity, respectively.

TABLE 1. Access to Infrastructure Services in the CMC area

Infrastructure Service	Number of People with access
Electrification	118,180
Drinking water	122,048
Pipe water	119,775
Sewerage pipes	71,032
Garbage collection	120,313

(Source - Colombo Municipal Council)

However, due to the water supply system's low and fluctuating water pressure and intermittent supply, some areas receive water only during off-peak hours, while others receive water only 6-10 hours per day on average. In addition, in many parts of the city, the distribution networks are old and constructed more than a century ago (<https://www.adb.org/publications/sri-lanka-greater-colombo-water-and-wastewater-management>). It must be highlighted here that there is a poor nexus between water and sanitation in the city. The sanitation services have poor coverage in the city.

Climatology of the city

The average mean temperature of around 27 - 28° C makes the county of Sri Lanka one of the hottest countries in the world. Colombo has warm and humid for the greater part of the year. Its average temperature of 28 - 29° C, like much of the rest of the country, has little monthly variation in temperature. Daily maximum temperatures average around 31° C all year round.

Indicators	Characteristics
Classification of the City	Coastal
Climate Type	Tropical Monsoon Climate (Koppen Climatic Classification)
Average Annual Maximum Temperature	30.7 ⁰ C
Average Annual Minimum Temperature	24.1 ⁰ C
Average Annual Rainfall	2523.7 mm
Height above Mean Sea Level	1 metre

Table- 2: *Climate projections and extreme weather impacts in Colombo city*

Source: IRADe, 2022

The city observes a mean rainfall of 2,300 mm. According to the above rainfall data chart, since 2010, Colombo has received the highest recorded rainfall of 3,369.9 mm in 2010 and the least amount of rainfall of 1,774.2 mm in 2011.

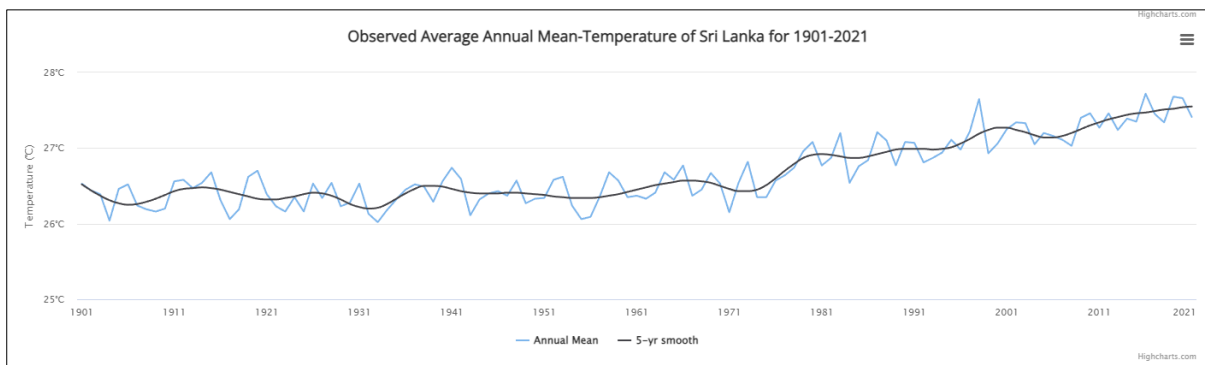


Figure 1: Observed Average Annual Mean- Temperature of Sri Lanka for 1901- 2021

Source: <https://climateknowledgeportal.worldbank.org/country/sri-lanka/climate-data-historical>

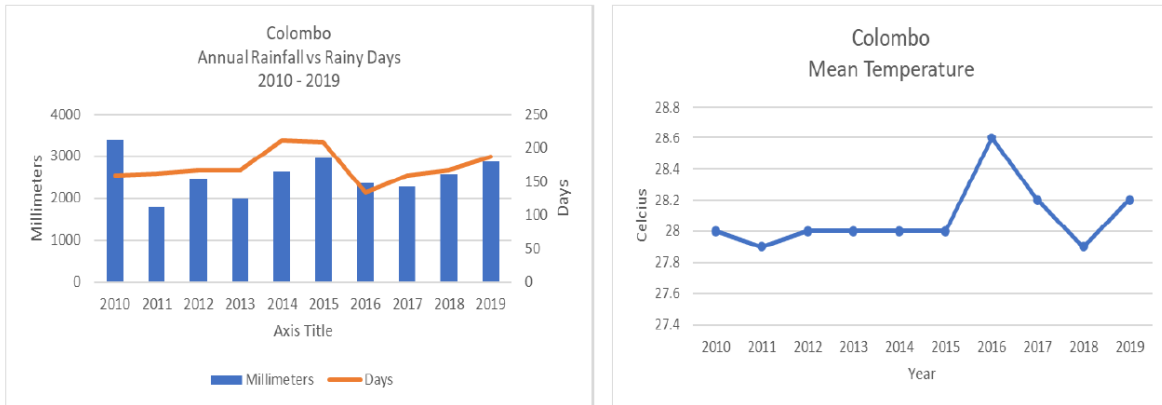


Figure 2. Average rainfall and rainy days, and mean temperature in Trincomalee District (2010 - 2019) Source: (Central Bank of Sri Lanka, 2020)

Furthermore, the above graph demonstrates rainy days fluctuation in Colombo over 10 years. According to the data, 2014 had the greatest number of rainy days which is 211 days in Colombo while 2016 had the least number of rainy days which is 133 days. In addition, The above data chart demonstrates mean temperature fluctuation in Colombo over 10 years. The mean temperature in Colombo varies from 27 ° C to 29 ° C in between 2010 to 2019. According to the graph above, the mean temperature in 2016 shows the highest value and in 2011 and 2018 it shows the lowest value.

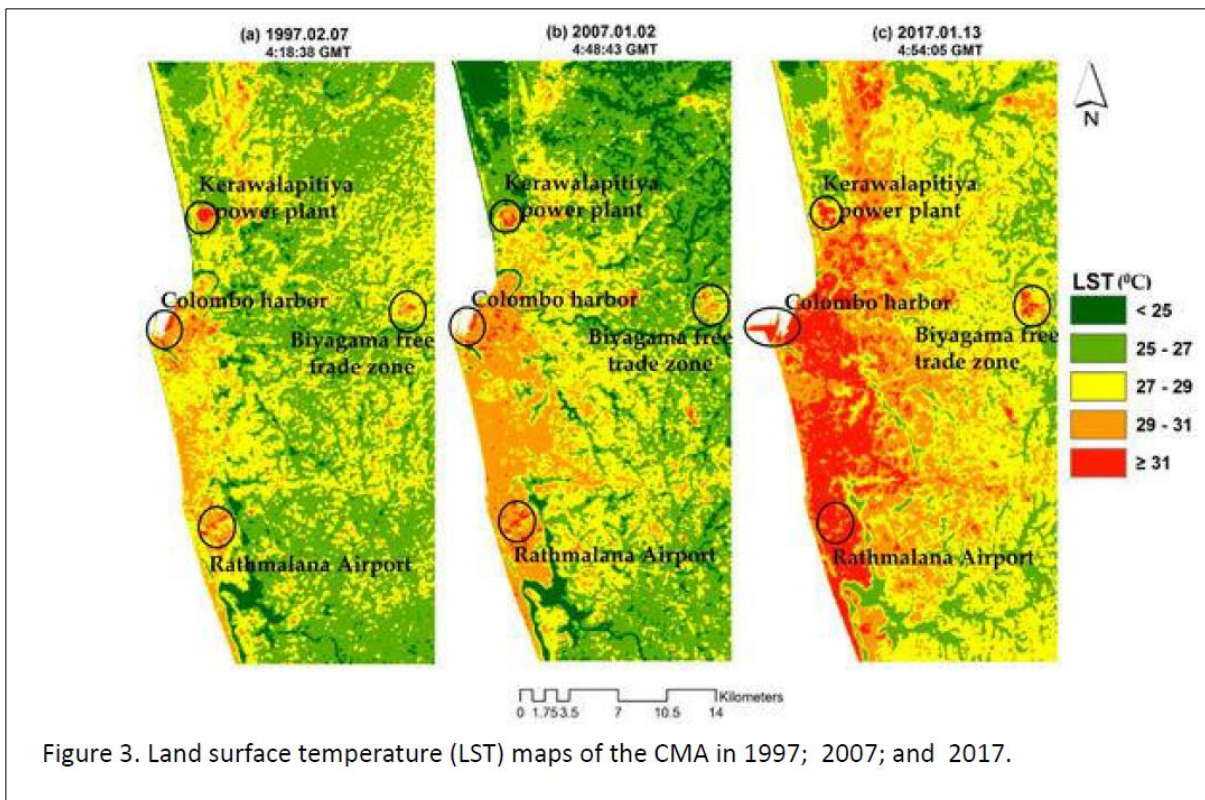


Figure 3. Land surface temperature (LST) maps of the CMA in 1997; 2007; and 2017.

The land surface temperature maps of Colombo Metropolitan Area in 1997, 2007 and 2017 are shown above and the descriptive statistics of the retrieved land surface temperature values are summarized in the Table below. In 1997 the land surface temperature in Colombo Metropolitan Area ranged from 21.06–34.86 °C, with a mean of 26.98 °C. In January 2007, it varied between 21.10 °C and 34.02 °C, with a mean of 26.96 °C, and in January 2017, it ranged from 22.31–35.94 °C, with a mean of 28.62 °C. Generally, higher land surface temperature values were found mostly along the coastal belt, the more urbanized part of the CMA. In 1997 and 2007, areas with highland surface temperatures were mostly concentrated near the Colombo harbour, Ratmalana Airport, and the Kerawalapitiya power plant area. By 2017, however, areas with high LST had greatly expanded towards the northern, southern and eastern parts of the CMA, following the spatial pattern of urban development in the area. It can also be observed that the land surface temperature values of the areas where the free trade zones and large factories are located have also increased (Ranagalage et al., 2027).

The table below shows the descriptive statistics of the retrieved LST values in CMA (°C).

Date	Minimum	Maximum	Mean	Standard Deviation
1997	21.06	34.86	26.98	1.12
2007	21.10	34.02	26.96	1.57
2017	22.31	35.94	28.62	1.71

Table- 3: *Climate projections and extreme weather impacts in Colombo city*

Source:

The table below lists the extreme weather events faced by the city due to climate change.

HAZARD AND EXTREME EVENTS	
Temperature Observed	<ul style="list-style-type: none"> • 23⁰C (January) to 32⁰C (April) and is rarely below 21⁰C or above 33⁰C.²
Temperature Projections	<ul style="list-style-type: none"> • Temperature to increase by 1.3⁰C by 2100 relative to 1995 – 2014.³
Rainfall observed trend	<ul style="list-style-type: none"> • 2312 mm⁴
Rainfall projections	<ul style="list-style-type: none"> • Summer rainfall to decrease by 35% in 2050³
Heat Waves	<ul style="list-style-type: none"> • Urban areas are extremely vulnerable to rising temperatures and have already risen by 1.6⁰C.⁶ • Heat stress management is an important issue to address through policies and plans, including considerations for the effects of extreme heat in vulnerable communities.⁶ • 2019 was the second hottest year for Colombo.⁷

- Mean temperature rose by 0.2⁰C from 28⁰C in 2010 to 28.2⁰C in 2019.⁷

Recent years have been among the hottest in recorded history, and average temperatures are rising.

Heatwave Management Practices

The country lacks a defined definition of Heat Stress, and Colombo has not experienced any significant heat-related incidents in the preceding two decades. However, the possibility of heat waves and extreme heat conditions impacting urban areas is significant.

The lack of a Heat Action Plan for the Colombo Municipal Area remains a significant deficiency. Due to this, the risk groups in the Colombo Municipal Area who are affected by heat waves, heat disease, heat stress, etc., have not been clearly identified. Moreover, Groups such as the urban poor, women, youth, children, and the elderly face the highest risks to their well-being, health, income, and lives, highlighting the need for evidence-based, inclusive, and urgent heat action.

For this reason, it is essential to collaborate with the environment , health, planning, and infrastructure departments of the Colombo Municipal Council and implement capacity-building programs about heat waves, heat disease, and heat stress and heat action plan.