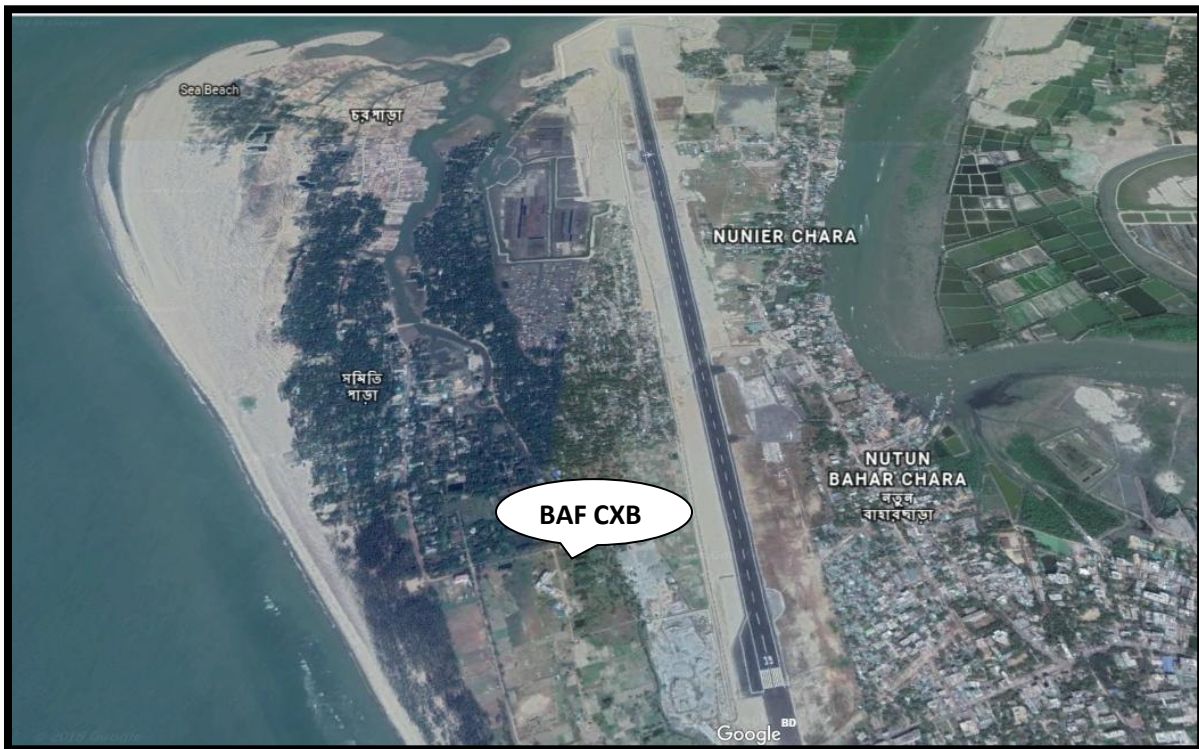




CLIMATE OF COX'S BAZAR



PREFACE

Weather can significantly affect aircraft operations, whether it is military or civil; whether it is winter or summer. Feeling the importance and requirement of weather information currently more than 190 countries are member of World Meteorological Organization (WMO). The importance of Cox's bazar Airfield vis-a-vis BAF Base Cox's Bazar (CXB) as a Forward Air Base increasing day by day. So requirement of climate information is also demanding for advance planning. BAF Met Sqn provides all types of weather related information, services and supports for all BAF flying and ground activities. It is not always possible for users to communicate Met Sqn to get weather related support instantly. Keeping this in mind, this booklet is prepared using 5 years climatological data recorded in Met Sqn, BAF CXB. "Climate of Cox's Bazar" is a study of last 5 years data for obtaining the normal of different weather and meteorological elements like temperature, rainfall, fog, thunderstorm, Norwester, Cyclone etc. Here the topography of Cox's Bazar has been highlighted as it has great influence on the weather. With the passage of time, more recorded data would enrich the subsequent edition of the booklet. In this regard, any suggestion/advice would be highly appreciable.

ACKNOWLEDGEMENT

The credit for preparing this booklet goes to WO M Fokhar Uddin Bhuiyan. During his tenure at BAF CXB he took initiative to compile this booklet. However the support of other Met Asst's are also acknowledged. Without their sincere and continual effort the preservation and recordings of climate data could not be done. This booklet will be guiding reference for any person living or working at Cox's Bazar.

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INTRODUCTION

1. Bangladesh Air Force Base Cox's Bazar (BAF CXB) is situated Cox's Bazar which is at the southeast (SE) Part of Bangladesh. Since BAF CXB is situated in the coastal area so the climate is different from other places. Met Sqn, CXB is responsible to Air Officer Commanding, BAF CXB for Meteorological services at CXB airfield and 20 miles around. It provides weather forecast to all BAF flights operating from and to this Airfield. "**Forecast for Operational Safety**" is the motto of Met Sqn, BAF CXB. Therefore, accurate and timely forecast is highly demanded from every corner for planning and accomplishment of different tasks. For that, we take hourly weather observations, view satellite and radar images, consult Numerical Weather Prediction (NWP) model output etc to forecast accurately on time. The significance of climate of a region is acknowledged with due importance by the planners of various fields. Thereby, the average weather conditions of BAF CXB has been compiled and published as "**Climate of CXB**" in 2018 as an attempt for easy understanding of weather pattern of this area. As BAF CXB establish in the year 2011 this booklet is prepared based on available last five years climate data.

DESCRIPTION OF BAF CXB

Cox's Bazar Airport (IATA: **CXB**, ICAO: **VGCB**) is a domestic airport in the beach town of Cox's Bazar, Bangladesh. The latitude of Cox's Bazar (CXB) airfield is **21°26'N**, and the longitude is **91°59'E**. Elevation is 3 m form mean sea level. The Runway is 9000feet long and 150 feet wide. BAF CXB located west side of the Runway. I t is a Forward Air Base of BAF. Frequently BAF fighters, transport ac and helicopters carry out flying from and to this airfield.

GEOGRAPHY OF COX'S BAZAR



Located along the Bay of Bengal in South Eastern Bangladesh, Cox's Bazar is the most popular tourist spot of Bangladesh. It is mostly famous for its longest natural sandy beach. The municipality covers an area of 6.85 km² with a population of 51,918. It is bounded by Chittagong District on the north, Bay of Bengal in the south, Bandarban District on the east, and the Bay of Bengal on the west. Major rivers include Matamuhuri, Bakkhali, Reju Khal, Naf River, Maheshkhali channel and Kutubdia channel. The climate of Cox's bazar is mostly tropical, similar to the rest of the country. It is further characterised by the location in the coastal area. The weather of Cox,s Bazar is very much effected by land & sea breeze. Very often cyclone and deapression from Bay of Bengal hit this region. However because of its location Cox's Bazr is a geopolitically important city of Bangladesh.

MONTHLY MEAN MAXIMUM TEMPERATURE

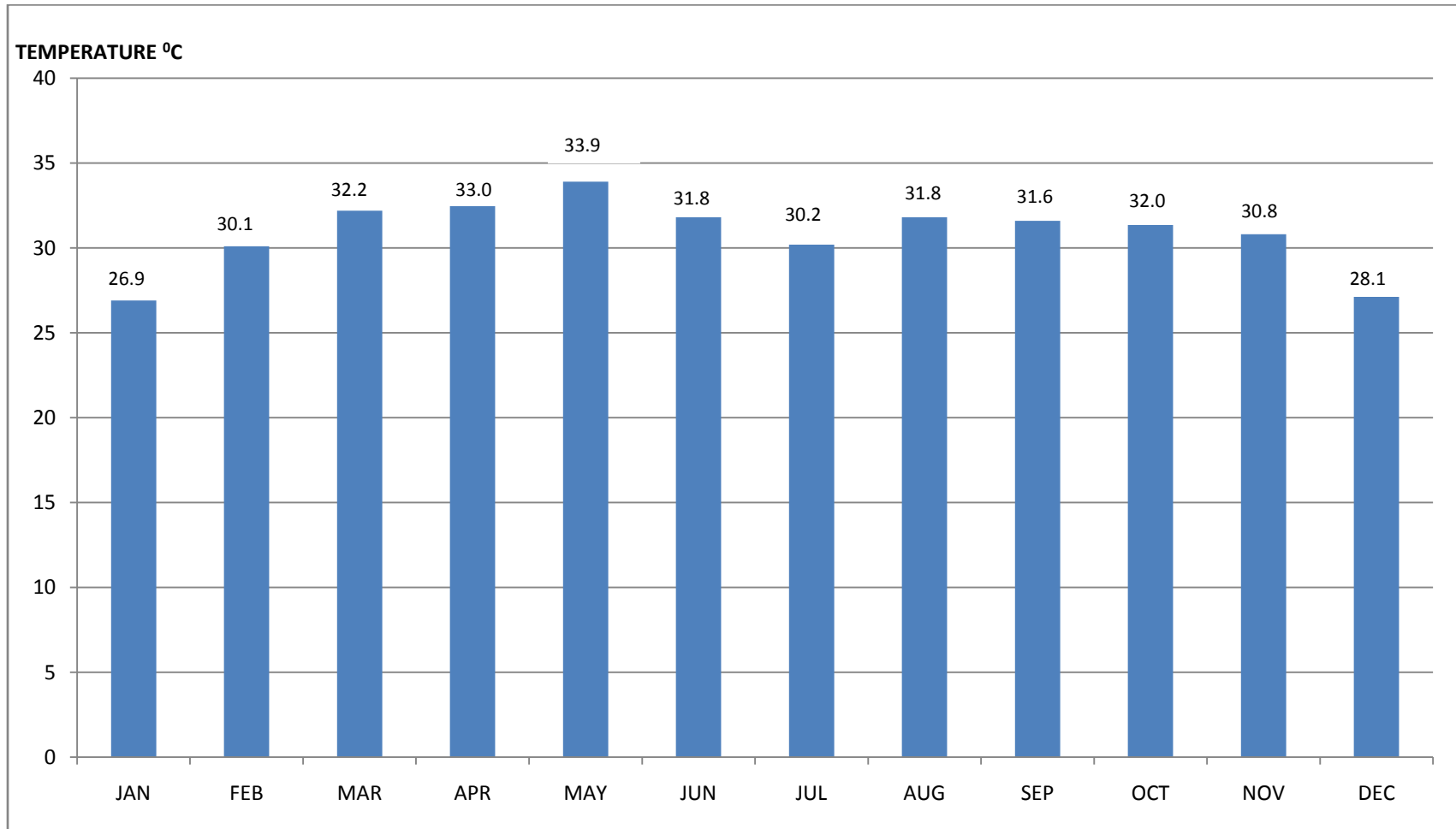


Fig-1: Monthly Mean Maximum Temperature

MONTHLY HIGHEST TEMPERATURE

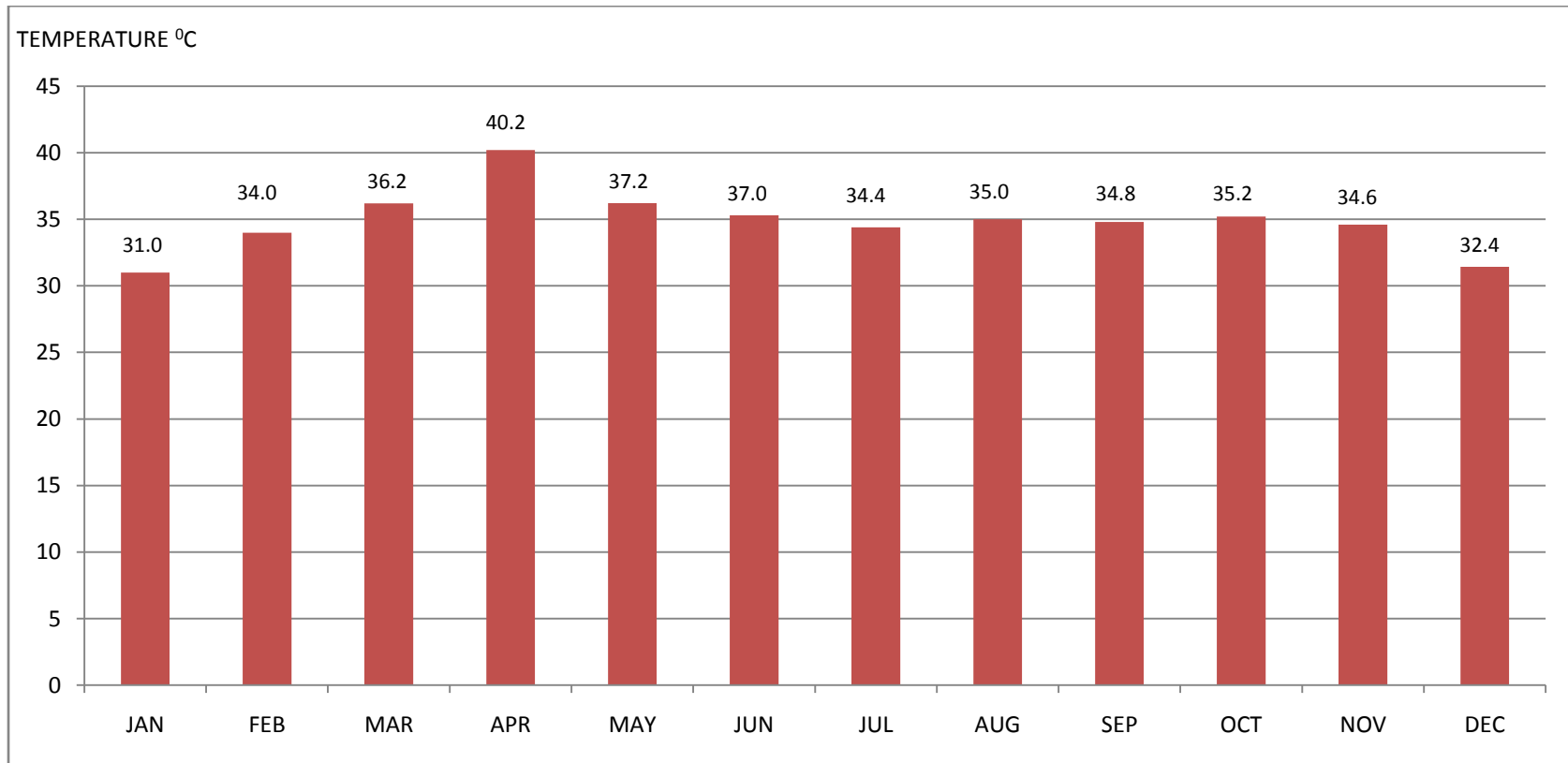


Fig-2: Monthly Highest Maximum Temperature

MONTHLY MEAN MINIMUM TEMPERATURE

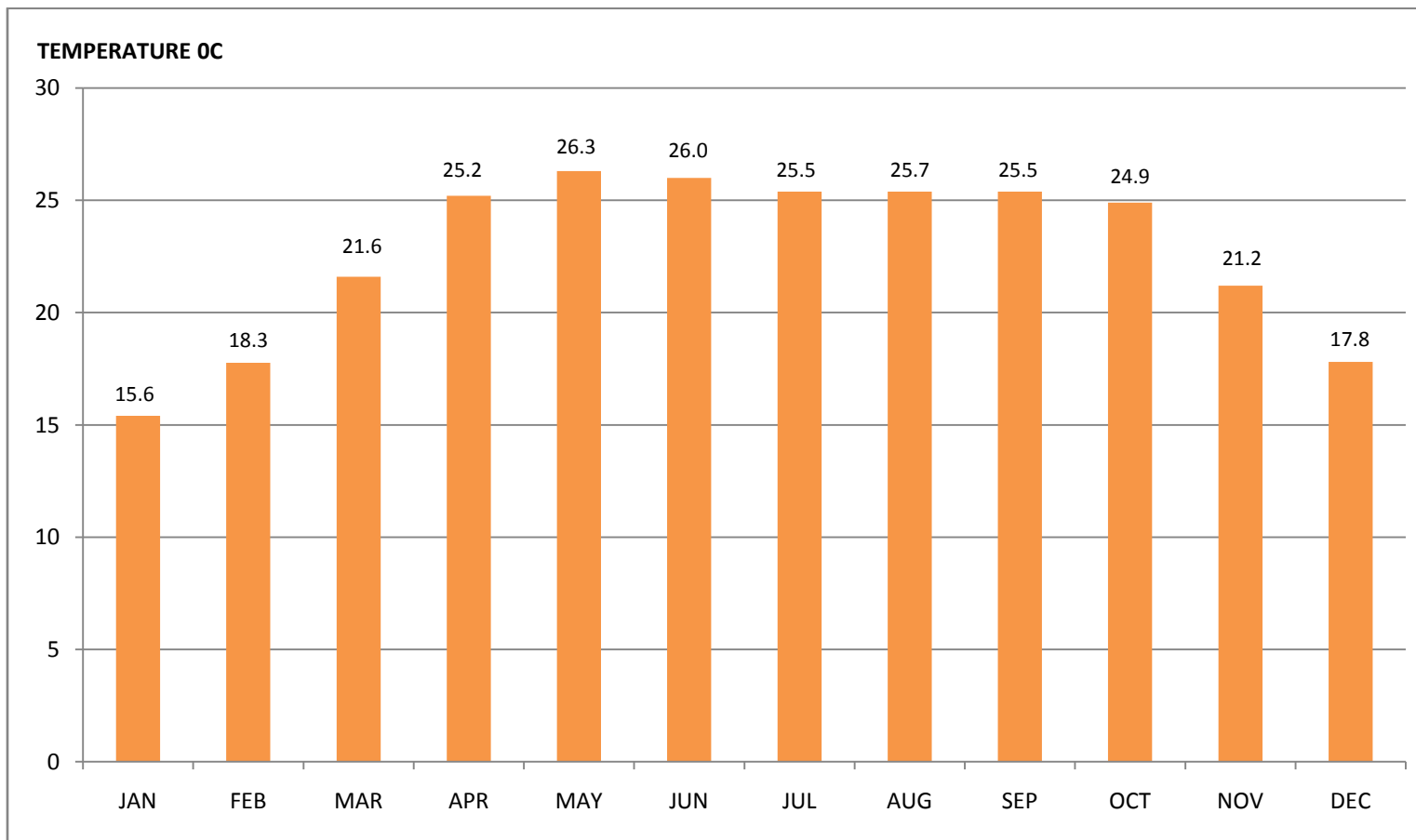


Fig-3: Monthly Mean Minimum Temperature

MONTHLY LOWEST TEMPERATURE

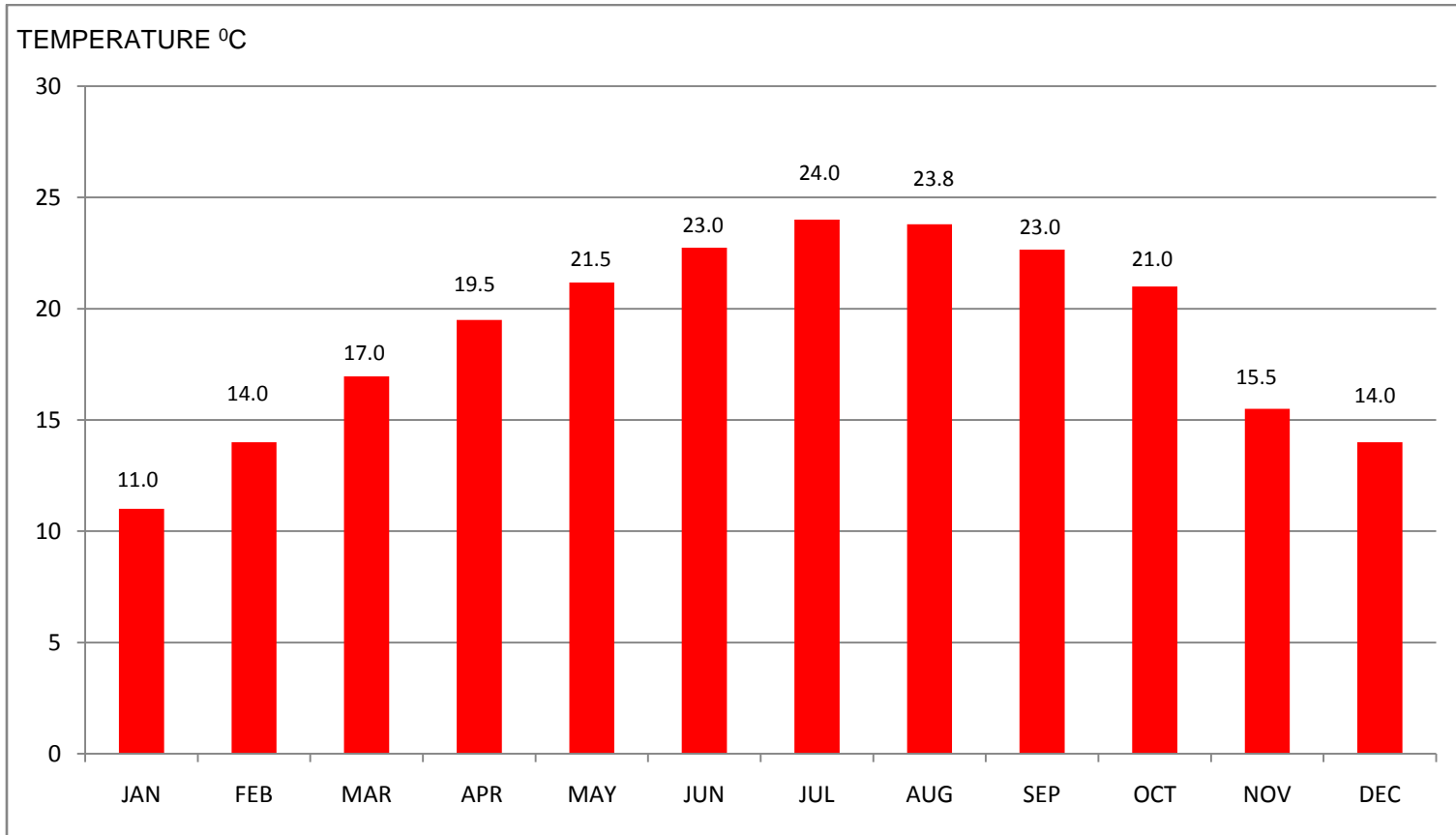


Fig-4: Monthly Lowest Minimum Temperature (2013-2017)

MONTHLY NO OF AVERAGE RAINY DAYS

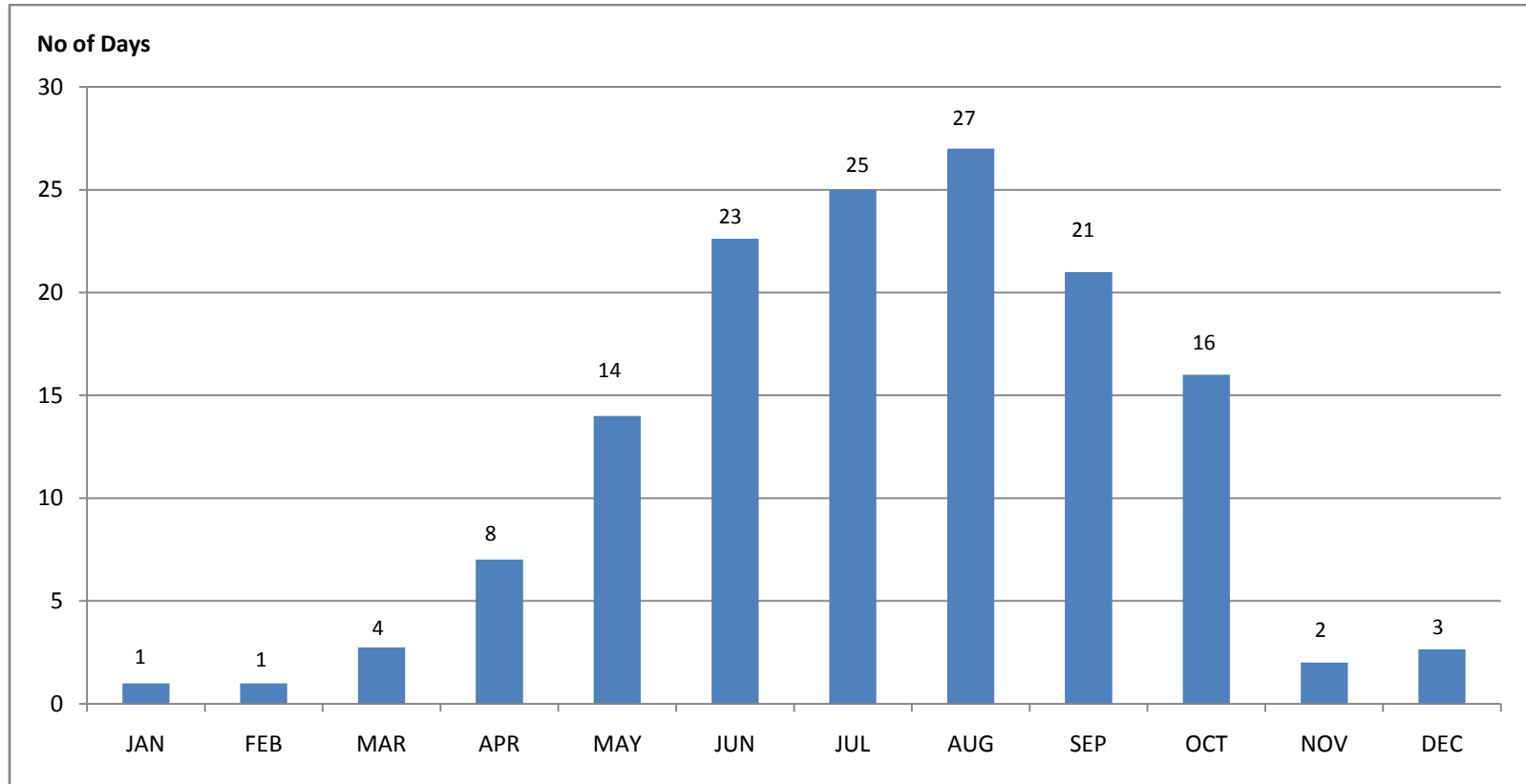


Fig-5: Monthly Average No of Rainy Days (2013-2017)

MONTHLY AVERAGE OF RAINFALL AMOUNT (MM)

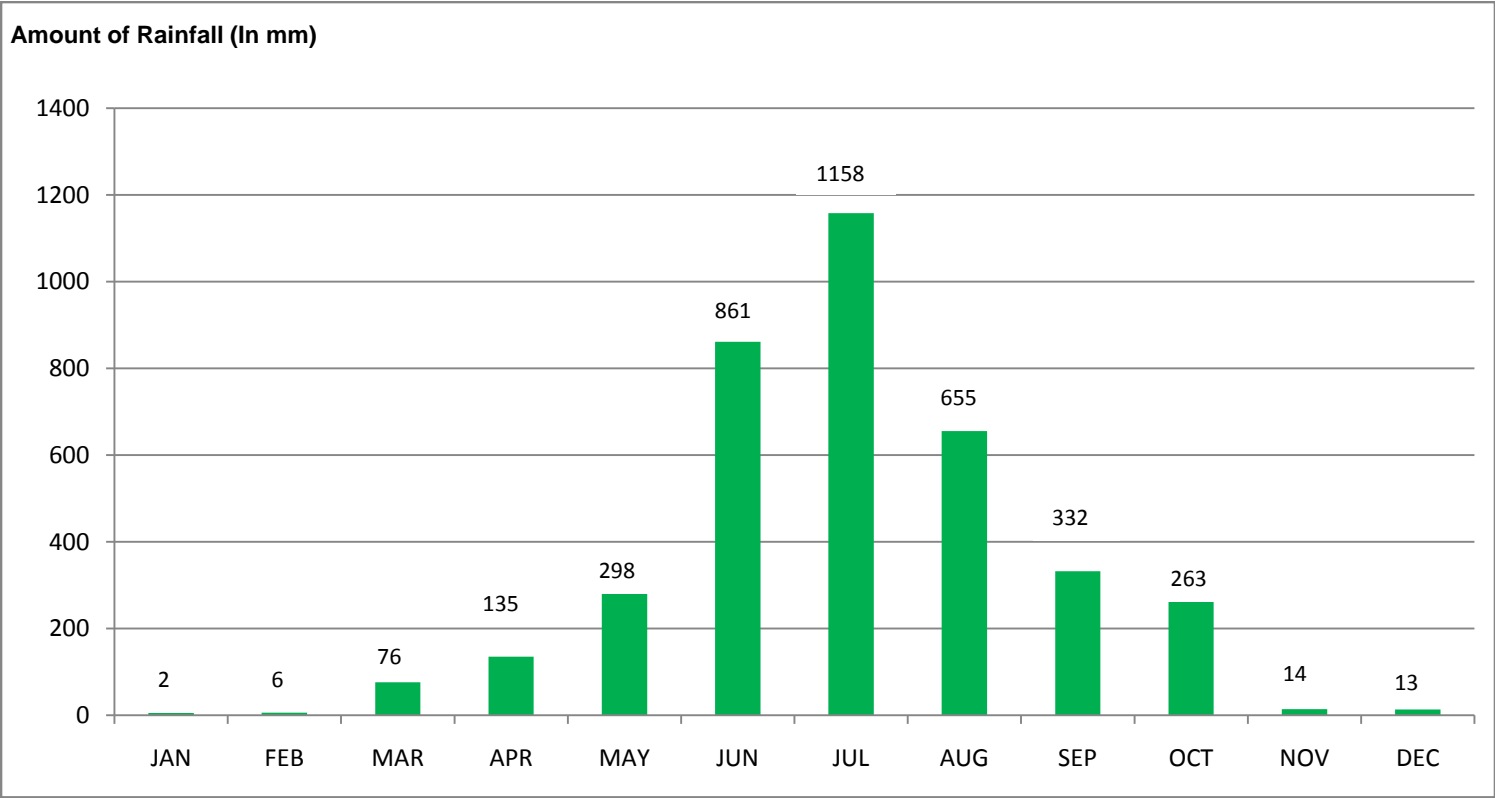


Fig-6: Monthly Average Amount of Rainfall (2013-2017)

YEARLY TOTAL AMOUNT OF RAINFALL (MM)

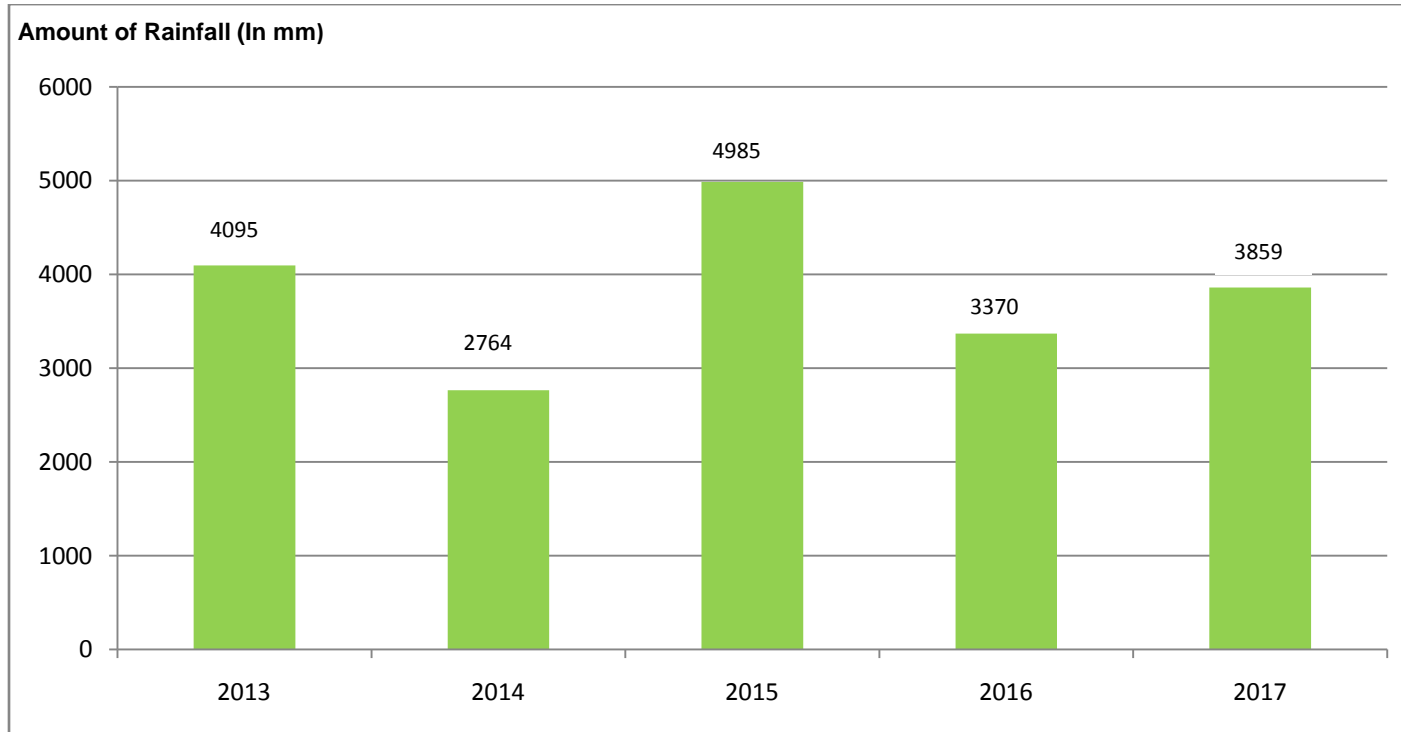


Fig-7: Yearly Total Amount of Rainfall

YEARLY TOTAL NO OF RAINY DAYS

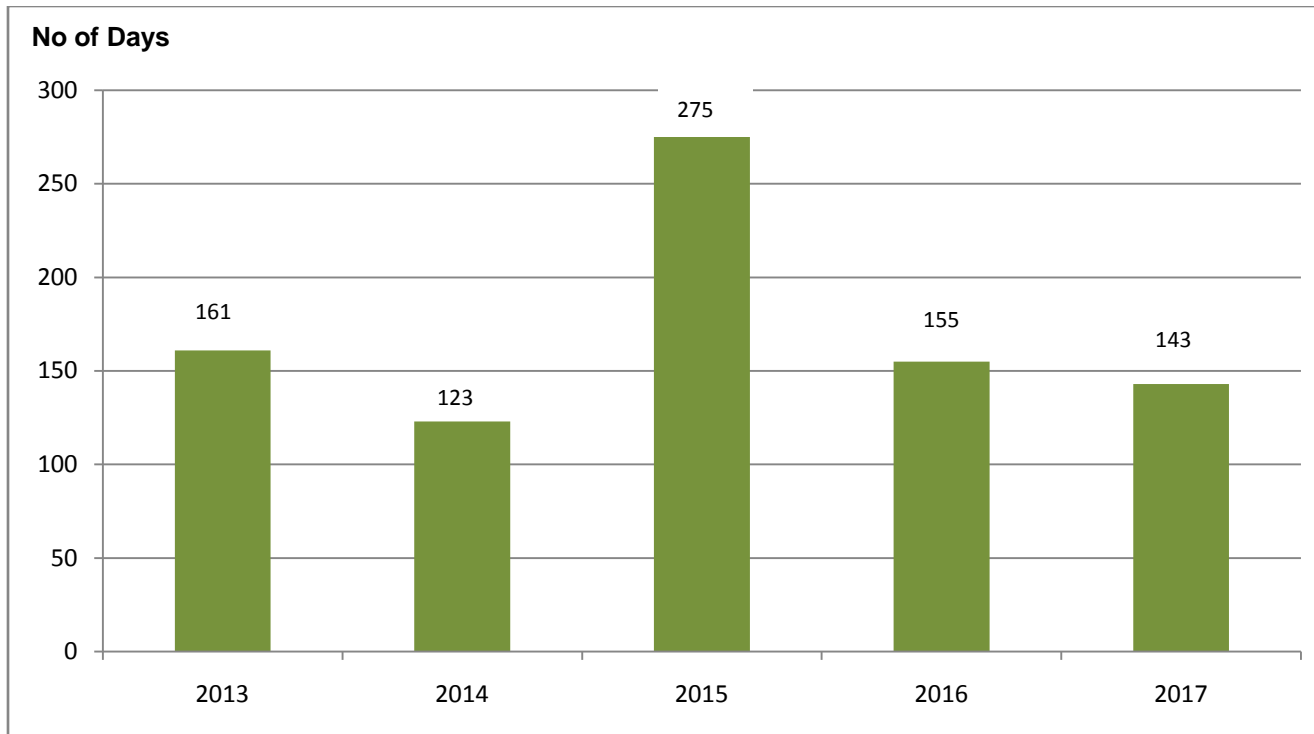


Fig-8: Yearly Total no of Rainy Days

MONTHLY AVERAGE NO OF TS DAYS

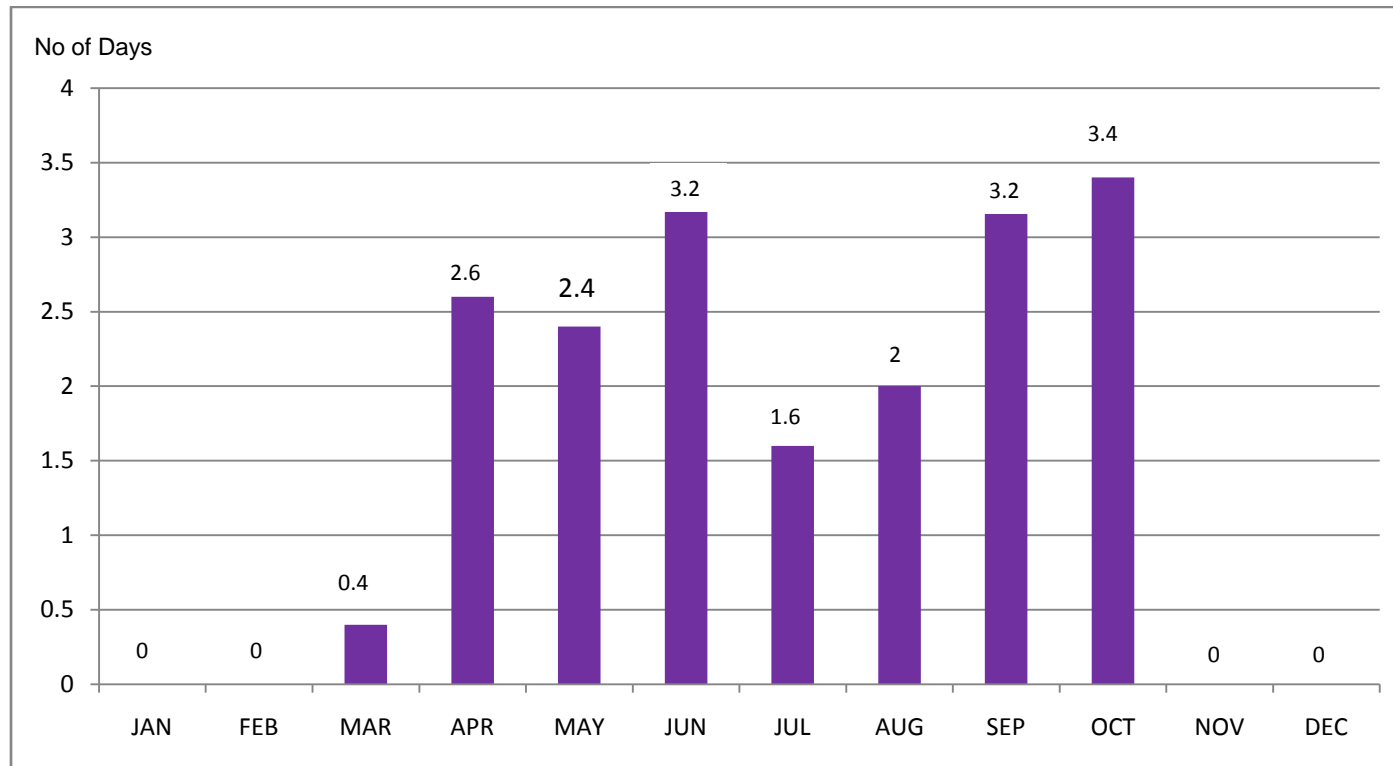


Fig-9: Monthly Average No of Thunderstorm Days

MONTHLY AVERAGE OF CYCLONE/ DEPRESSION

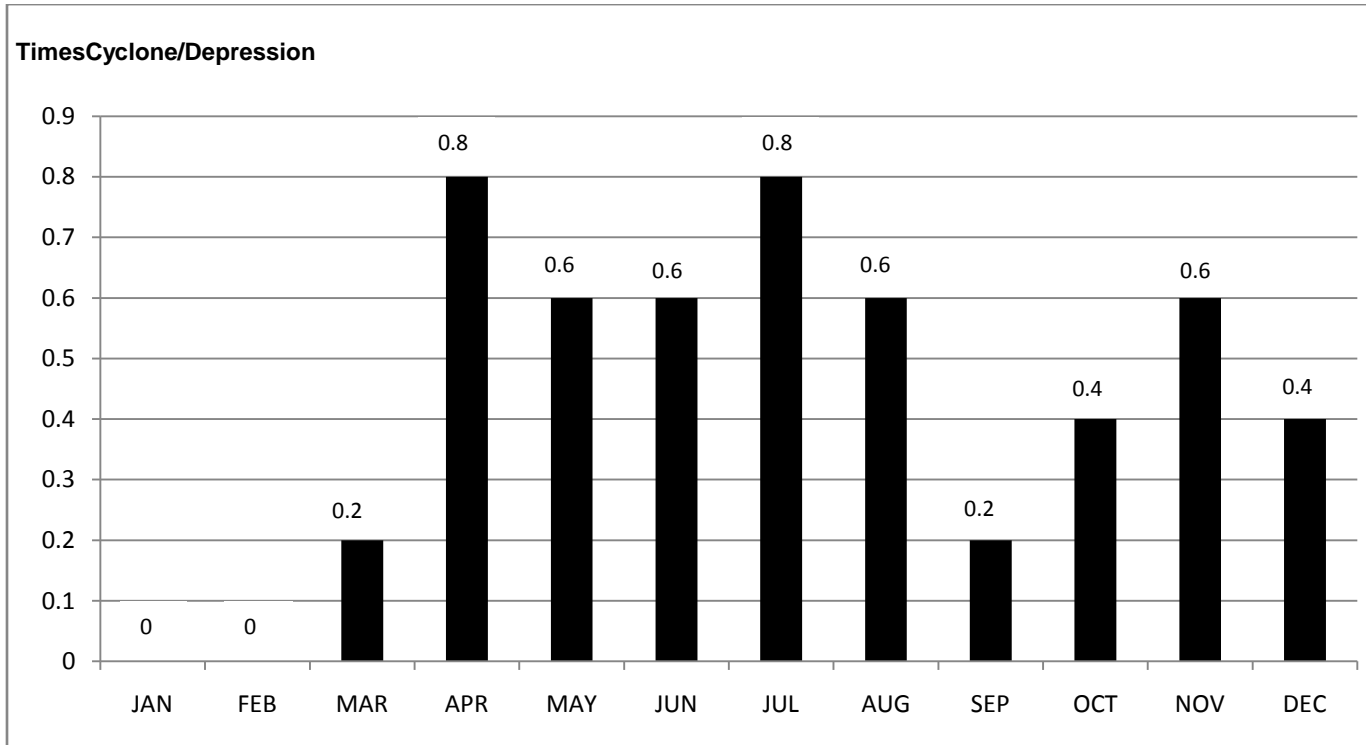


Fig-10: Monthly Average of Cyclone /Depression Over Bay of Bengal

YEARLY TOTAL NO OF CYCLONE/ DEPRESSION

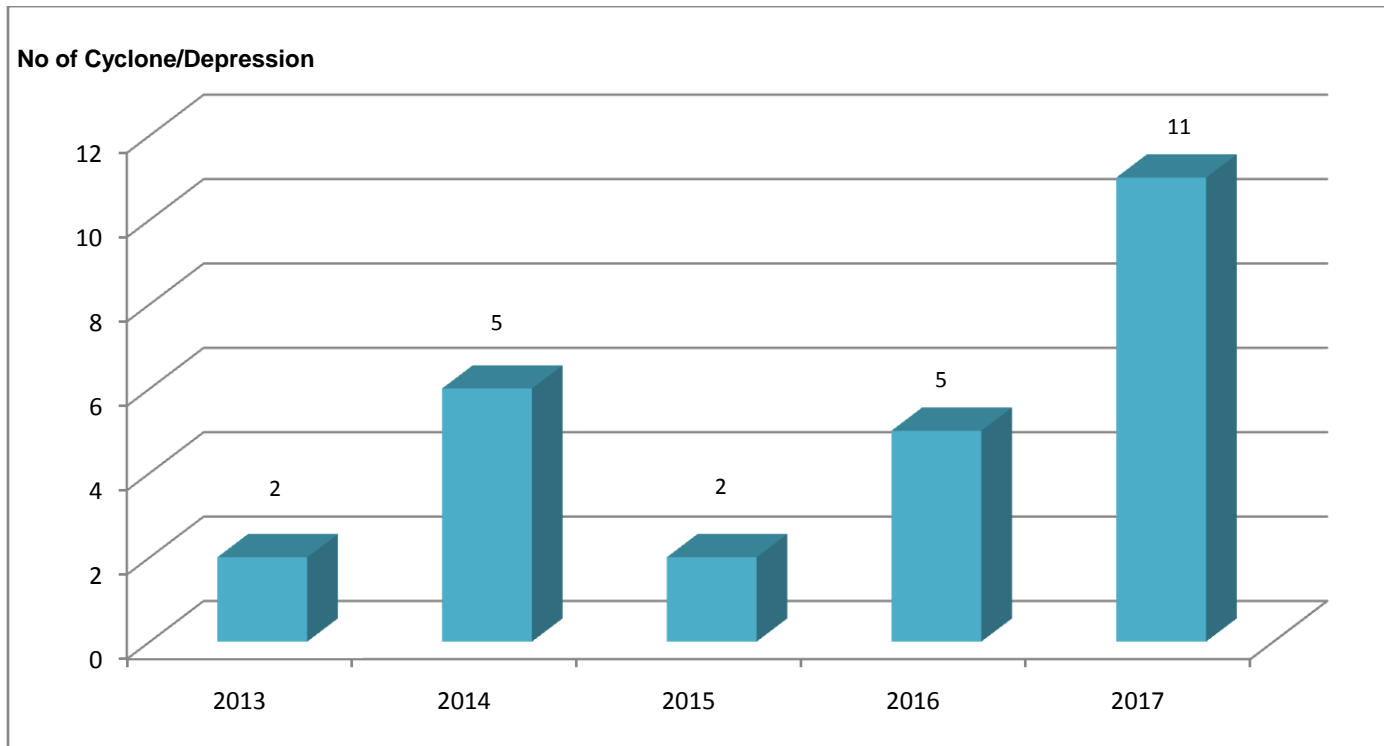


Fig-11: Yearly total no of Cyclone /Depression over Bay of Bengal

EXTREME WX OF COX'S BAZAR

| DATE | Max Rainfall (mm) | Highest Max Temp (°C) | Lowest Mini Temp (°C) | Rmk |
|-----------|-------------------|-----------------------|-----------------------|--|
| 24 Jun 15 | 467 | - | - | Acording to Cox's Bazar Civ Met & BAF Met record |
| 22 Apr 14 | - | 39.5 | - | Acording to Cox's Bazar civ Met record |
| 11 Jan 13 | - | - | 10.3 | Acording to Cox's Bazar civ Met record |
| 21 Apr 14 | - | 40.2 | - | Acording to Cox's Bazar BAF Met record |
| 26 Jan 16 | - | - | 12.4 | Acording to Cox's Bazar BAF Met record |

Table – 1: Extreme Wx of Cox's Bazar

2. Various Weather and Meteorological elements of Last 05 years (2013 - 2017) are analyzed and discussed in the following paragraphs:

a. **Monthly Mean Maximum Temperature.** Fig-1 reveals that the month May is having mean max temp 33.9°C, March and April is having mean max temp 32°C - 33°C, June, Aug, Sep and October is having mean max temp 31°C - 32°C and other months mean max temp is 30°C and below. Therefore, **the month May is the hottest month of the year.**

b. **Monthly Highest Maximum Temperature.** Monthly highest max temp was observed in the month of **April (40.2°C; 21 Apr 14)** (Fig-2). and the next max temp was obtained in May.

c. **Monthly Mean Minimum Temperature.** It is revealed from the Fig-3 that the month Apr to October is having mean minimum temp within 25°C – 26.5°C, the month March & November is having the mean min temp 21 - 22°C and other months mean minimum temp is 15.5 °c – 18.5°C. **January** is having mean minimum temp **15.6°C.**

d. **Monthly Lowest Temperature.** It is obtained from this graph (Fig-4) that the lowest minimum temp was recorded in the month of January (**11⁰c on 12 Jan 2018**). The temp starts falling sharply from October till February and thereafter rising gradually till August. Mentionable that, cold wave is less active over CXB.

e. **Monthly no of Mean Rainy Days.** From fig-5 it is observed that more or less rainfall may occur in every month of the year and the maximum average rainy days in **July & August are 25 & 27 days** respectively.

f. **Monthly Total Amount of Average Rainfall (mm).** The graph (Fig-6) shows that in the month of July the average of rainfall, **1158 mm** which is highest. In the month of June & August average rainfall amount (**861mm**) & (**655mm**) respectively, in September (**332mm**). The amount of rainfall decreases sharply from October.

g. **Yearly Total Amount of Rainfall.** The variability of total rainfall amount in each year is not much so much remarkable or large. There are some exceptions. Last five years the highest amount of rainfall was found **4985 mm in 2015** and the lowest amount of rain was found **2764 mm in 2014**. The yearly average amount of rainfall is **3815 mm** (Fig-7).

h. **Yearly Total no of Rainy days.** The variability in total rainy days also very less like amount of rain fall. The maximum no of rainy days was **275 days 2015** and the lowest rainy days in a year was **123 days 2014**. The yearly average number of rainy days is **171 days** (Fig-8).

j. **Monthly Average No of TS Days.** From figure -9 it is found that thunderstorms occur from March to October and maximum avg no of thunderstorm occurs in the month of Oct (**3.4 days**) and in June & Sep (3.2 Days).The thunderstorms of pre-monsoon season (March to May) are mostly associated with Nor'wester.

K. **Monthly Average no of Cyclone/Depression.** BAF CXB is located in the bank of Bay of Bengal. Due to geographic location this region is frequently effected by devastating tropical cyclones. Because of the funnel-shaped northern portion of the Bay of Bengal most of the tropical cyclones affect this area. Except January and February cyclonic system form over Bay in all other months. Frequency of Cyclone formation is more in April frequency of depression is more in July.

I. **Yearly Total no of Cyclone/Depression.** From fig -11 we can see maximum Cyclone /Depression has formed in the year of 2017 (11 times). In last five years total number of cyclone was 05, Deep Depression was 08 Depression was 12. Among five cyclone two cyclone crossed CXB. These are Roano & Mora. It is observed that most of the pre monsoon cyclone crossed through Cox's Bazar.

CONCLUSION

3. Weather forecasting has an application of vast importance in human activities as well as military operations. Flying is always hampered by hazardous weather. Aviator's require meteorological information for aviation. They want to know daily weather, pressure, temperature, wind direction and speed of the surface as well as upper air for the choice of air routes, preparation of flying schedules and any other operational flights. The climate of Cox's Bazar is mostly similar to the rest of the country. It is further characterized by its the location in the coastal area. An attempt made in this booklet to present the important climate info for the planners and aviators.