

**AIR-SEA INTERACTIONS IN
THE BAY OF BENGAL FROM
MONSOONS TO MIXING**

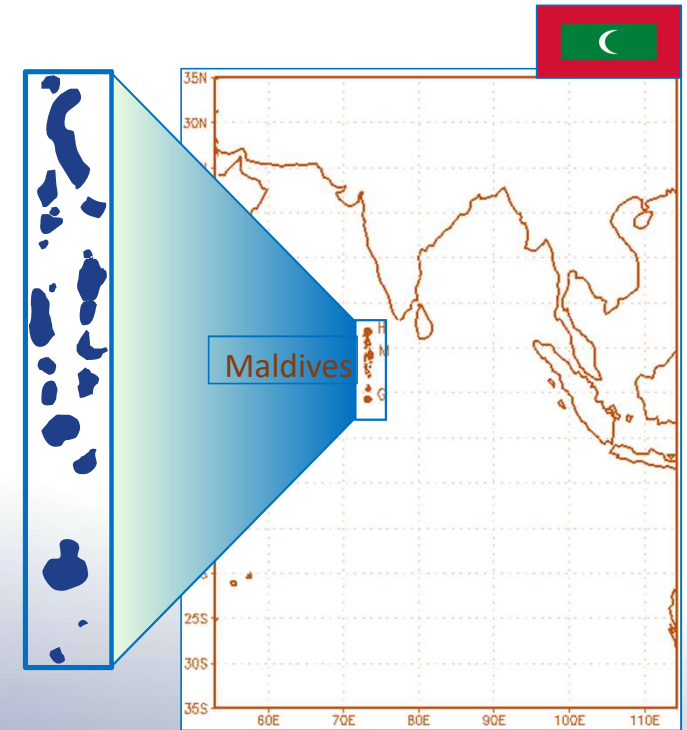
Weather and Climate Pattern over Maldives

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Maldives Meteorological Service

International Centre for Theoretical Sciences (ICTS-TIFR)
February 18-23, 2019, Bengaluru

The Maldives

- Maldives is an island nation in the Indian Ocean composed of 26 ring-shaped atolls, which are made up of 1,192 coral islands. About 99% of the country's area is sea.
- Average height of the islands are 2m above sea level.
- Fragile ecological profile, low elevation, combined with its economic dependence on limited sectors makes Maldives highly vulnerable to natural disasters and extreme climatic events.
- The population of the Maldives is 378,114 (as of Dec 2017)

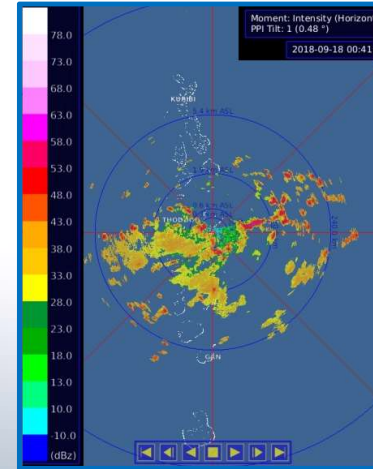


Weather and Climate Observational Network

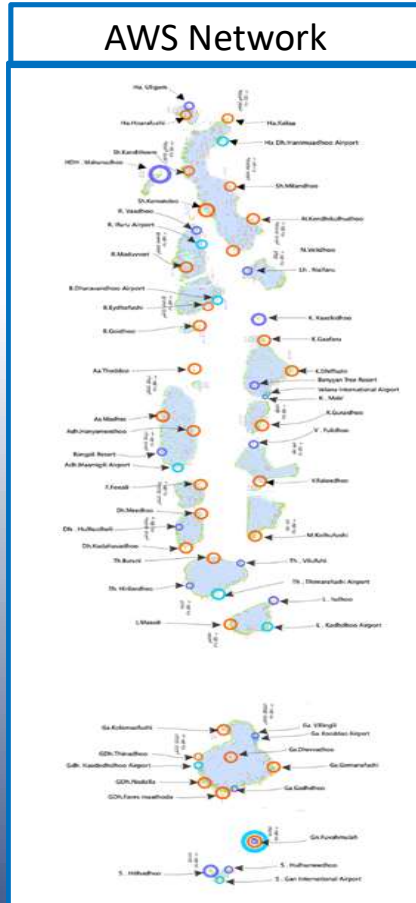
- I. Surface observations
 - ❖ Manned Observation Stations = 5
 - ❖ Automatic Weather Stations = 36
- II. Climate Observatory(MCOH)= 1
- III. Upper-air observations = 1
- IV. Doppler Weather Radar = 1
- V. Tide gauge observation = 3



Manned station



Doppler Weather RADAR



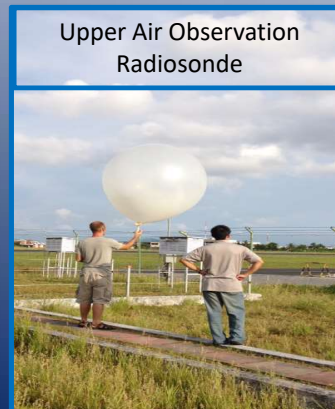
AWS Network



Tide station



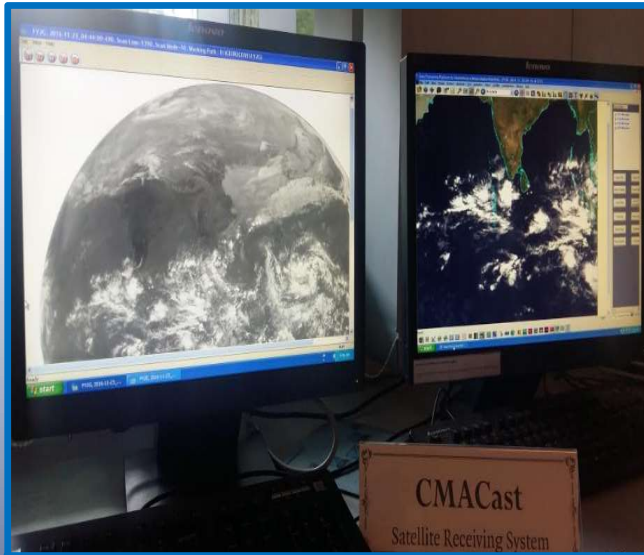
AWS



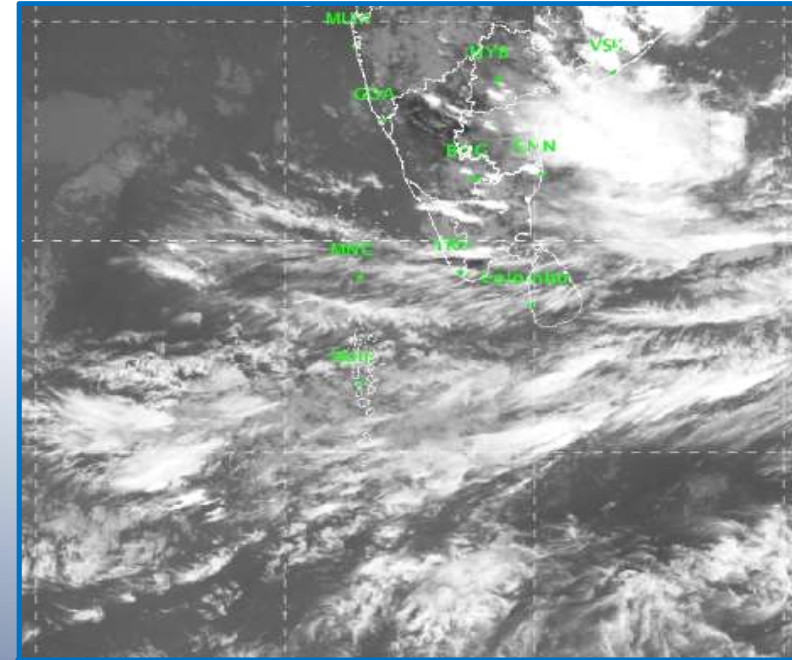
Upper Air Observation Radiosonde



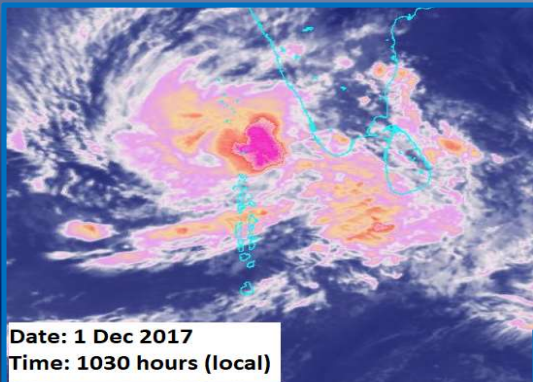
Weather and Climate Observational Network



FY-2, Satellite Data receiving system



INSAT-3D image from IMD <http://satellite.imd.gov.in/>

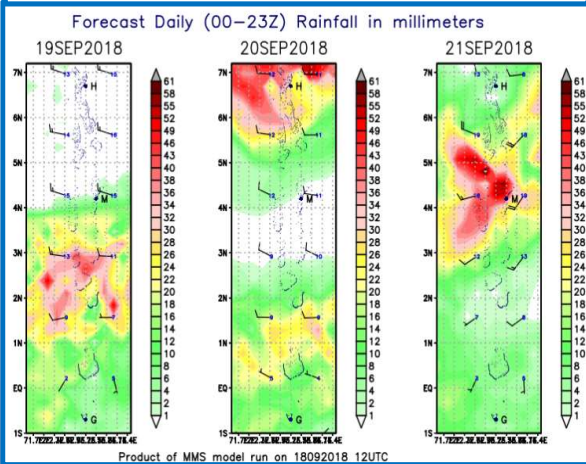


Date: 1 Dec 2017
Time: 1030 hours (local)

MICAPS & SWAP

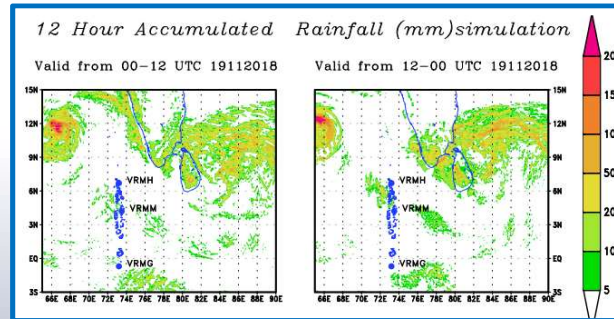
Weather Forecast Guidance Products

MMS WRF Model products.

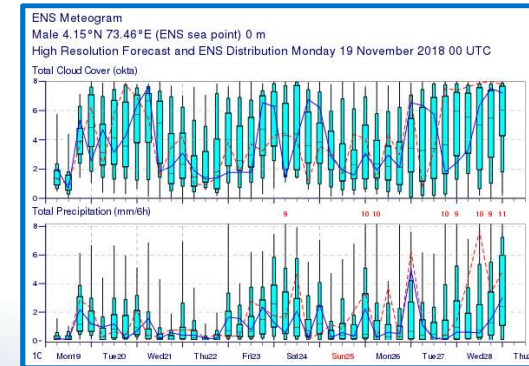


Model run on daily basis. Initial and boundary condition are taken from NCEP GFS data set.

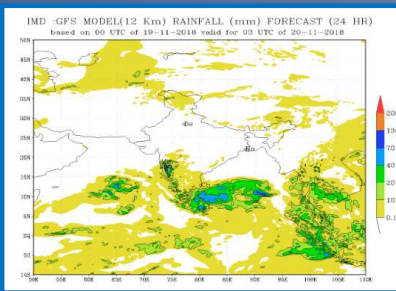
RIMES NWP products



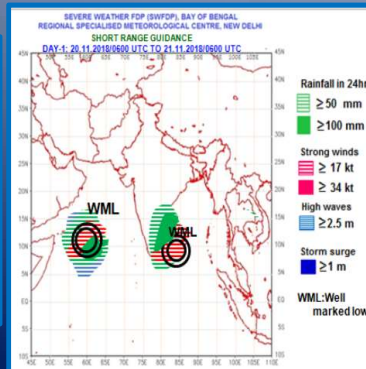
ECMWF products



IMD NWP products



SWFDP-BoB products



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SEVERE WEATHER FORECASTING DEMONSTRATION PROJECT (SWFDP) -BAY OF BENGAL
REGIONAL SPECIALIZED METEOROLOGICAL CENTRE- NEW DELHI

Guidance Prod. Satellite Global/Regional NWP Prod. Global EPS Prod. Ocean Forecast BOB-NWS Links SWFDP-BOB Links

Images -->
 Rainfall Products -->
 Nowcast -->
 SCOPE-Nowcasting

SEVERE WEATHER FDP (SWFDP), BAY OF BENGAL
REGIONAL SPECIALIZED METEOROLOGICAL CENTRE, NEW DELHI

SHORT RANGE GUIDANCE
DAY-1: 20.11.2018/0000 UTC TO 21.11.2018/0000 UTC

Integrated Ocean Information and Forecast System

Maldives

ESMO INCOIS RIMES

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EPGRAM-NCMRWF (SWFDP)

Data are available for last five days

Date: 2018-11-21
 Cycle: 00
 Country: Maldives
 City: Male

OK

Back



Severe Weather Events Experienced over Maldives

- ✓ Heavy rain
- ✓ Flood
- ✓ Thunderstorms
- ✓ Strong winds and rough seas
- ✓ Gust Winds
- ✓ Tidal and Swell Waves
- ✓ Funnel Cloud (Water Spout and Tornado)
- ✓ Tropical Cyclones.



Future climate projections indicate that the extreme flooding events are likely to become more frequent in the future with changing climate.



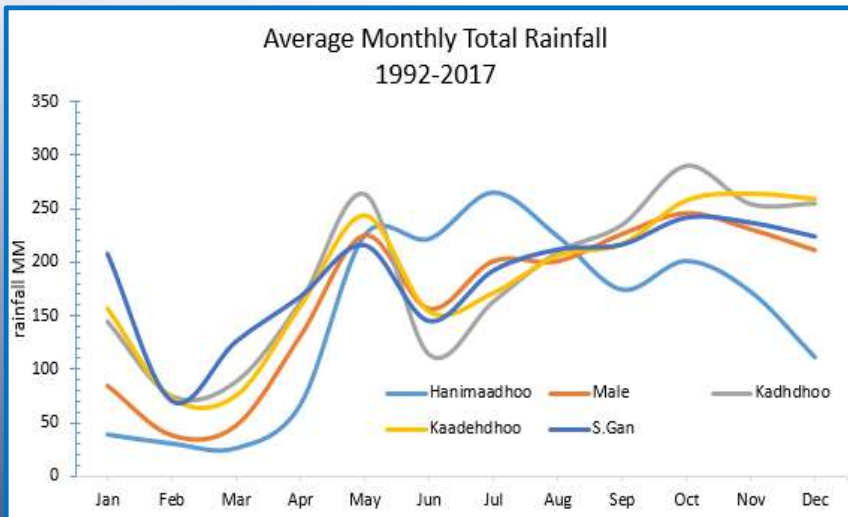
General Climate of Maldives

Maldives experiences tropical warm and humid climate.

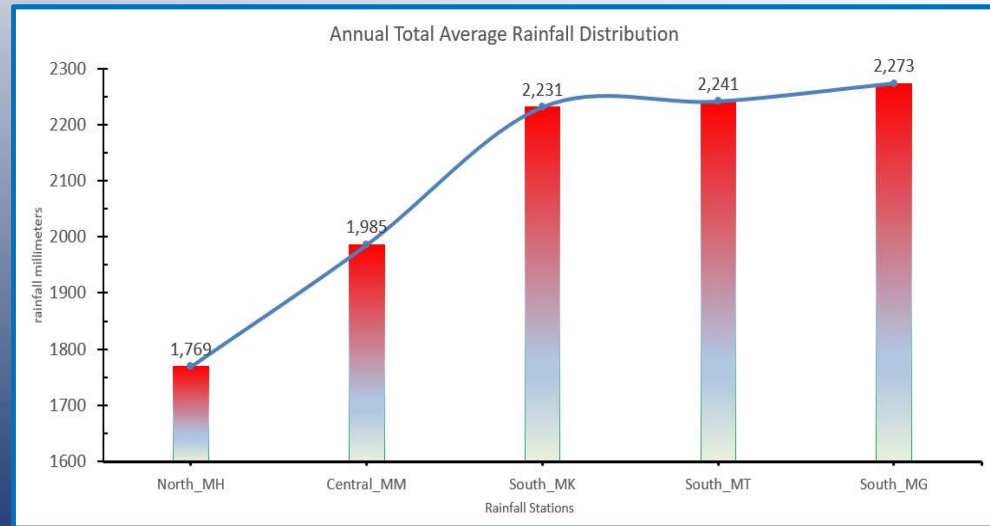
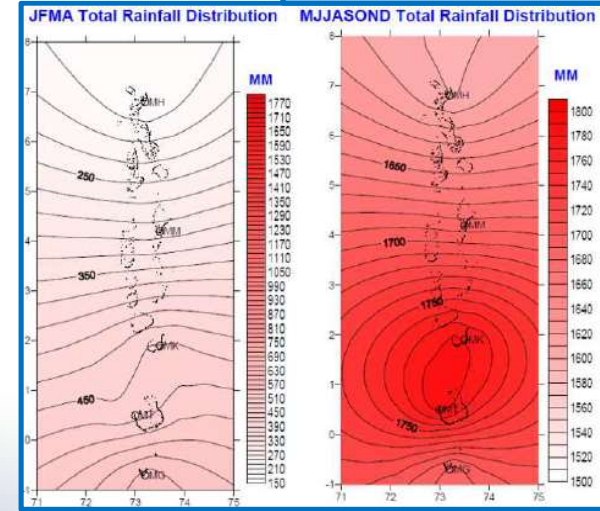
It has 2 distinct Seasons:

South-West Monsoon : mid-May to December

North-East Monsoon : January to April



Seasonal Total rainfall distribution



Annual average rainfall over the country varies between 1700 - 2300 mm per year

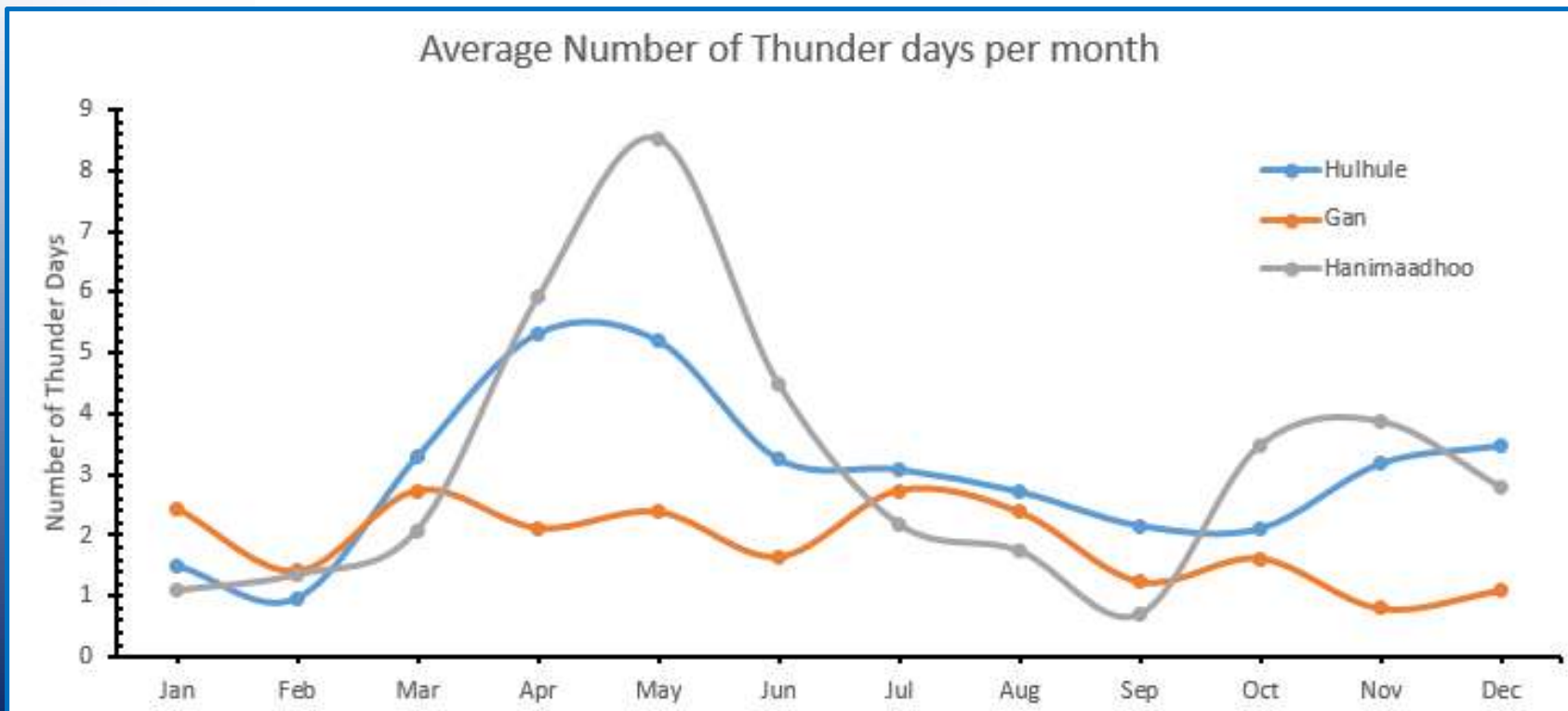
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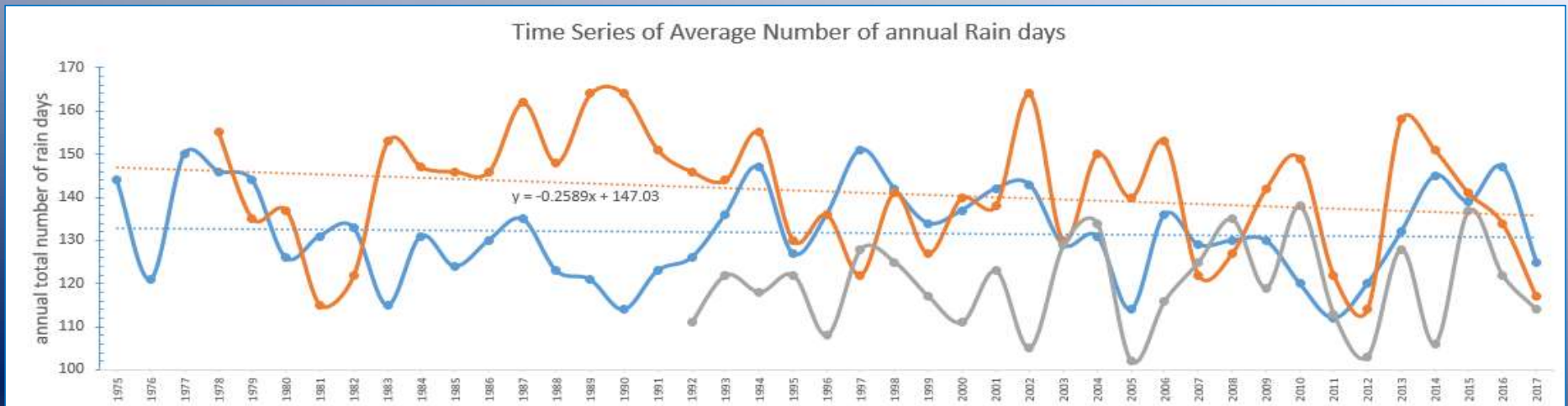
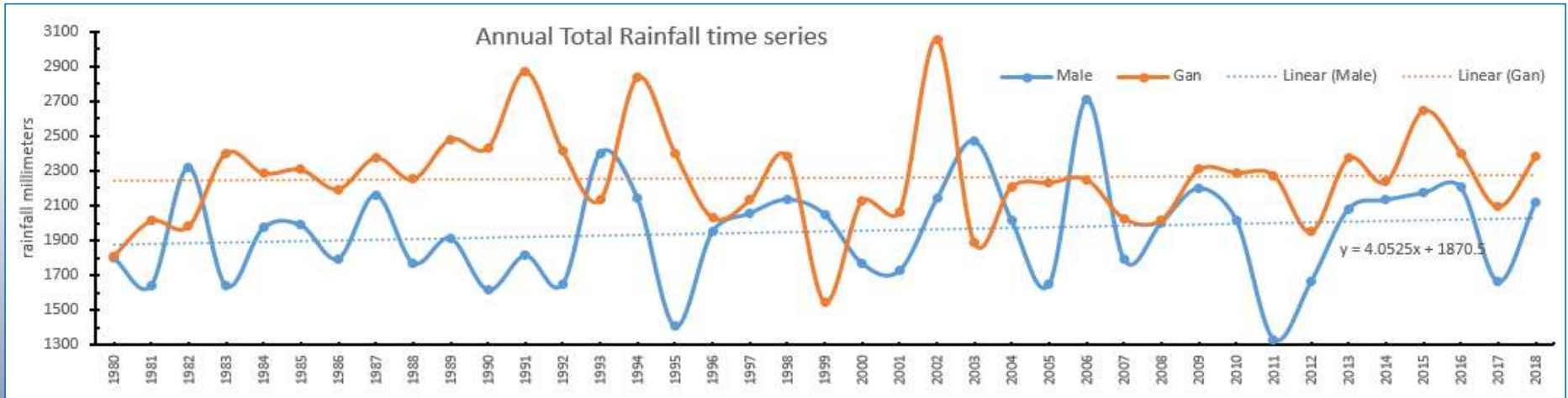
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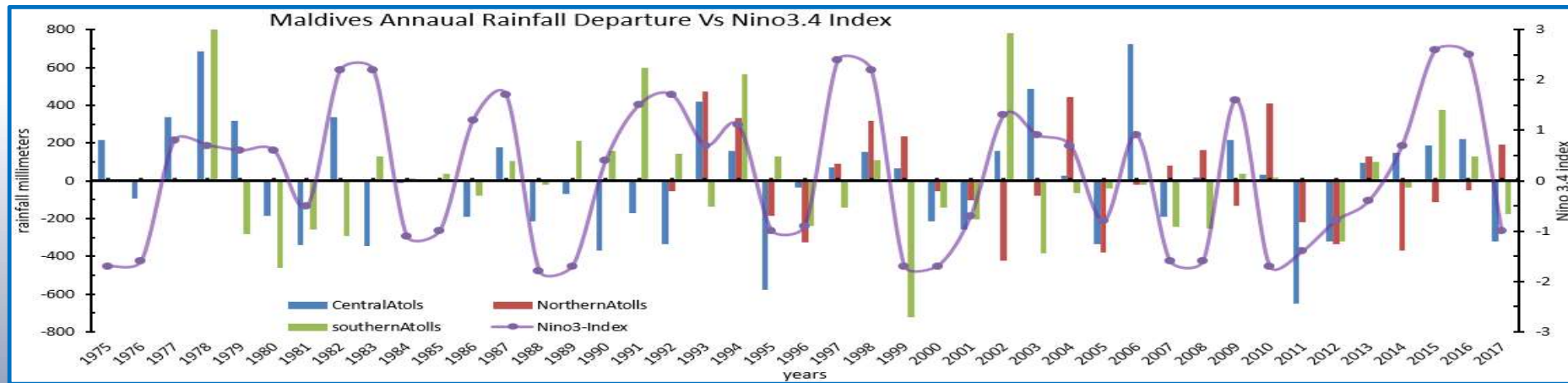
North-East Monsoon : January to April



Rainfall Trends

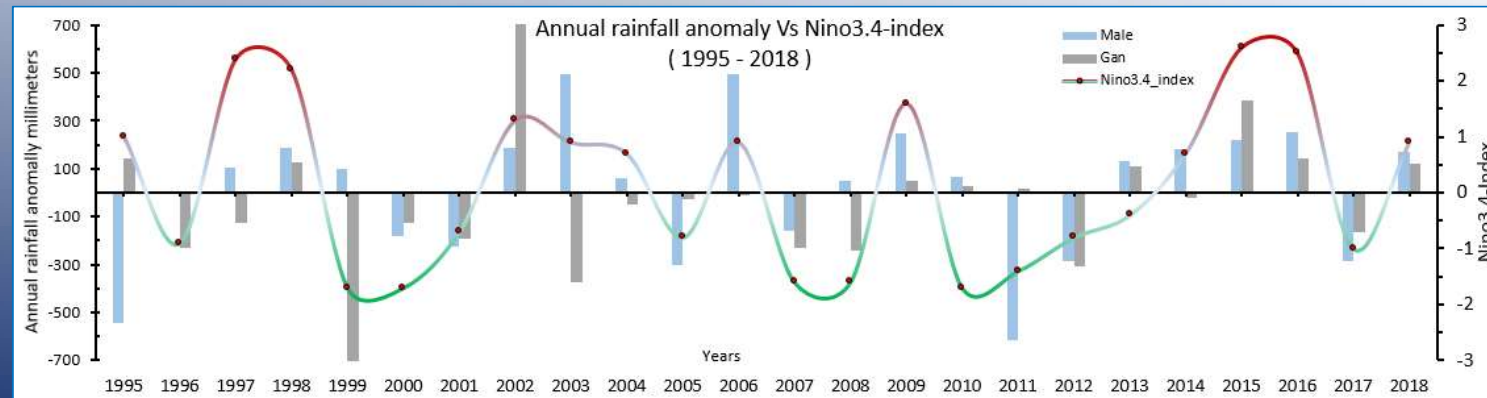


Rainfall Variability Vs Nino3.4 index

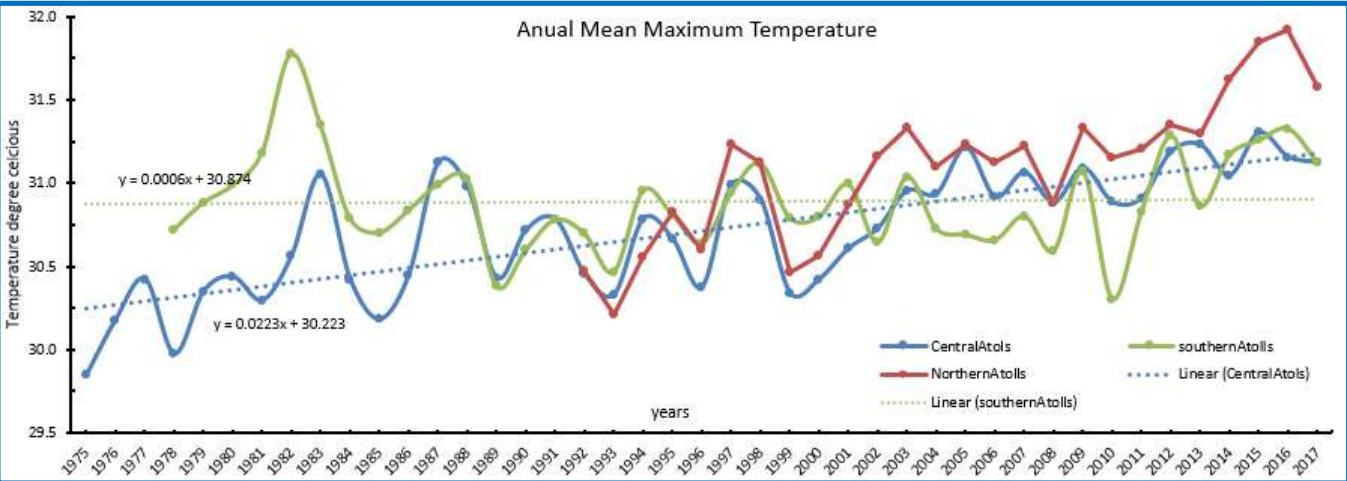


Strong El-Nino and strong La-Nina events correspond to excess and deficit rainfall respectively.

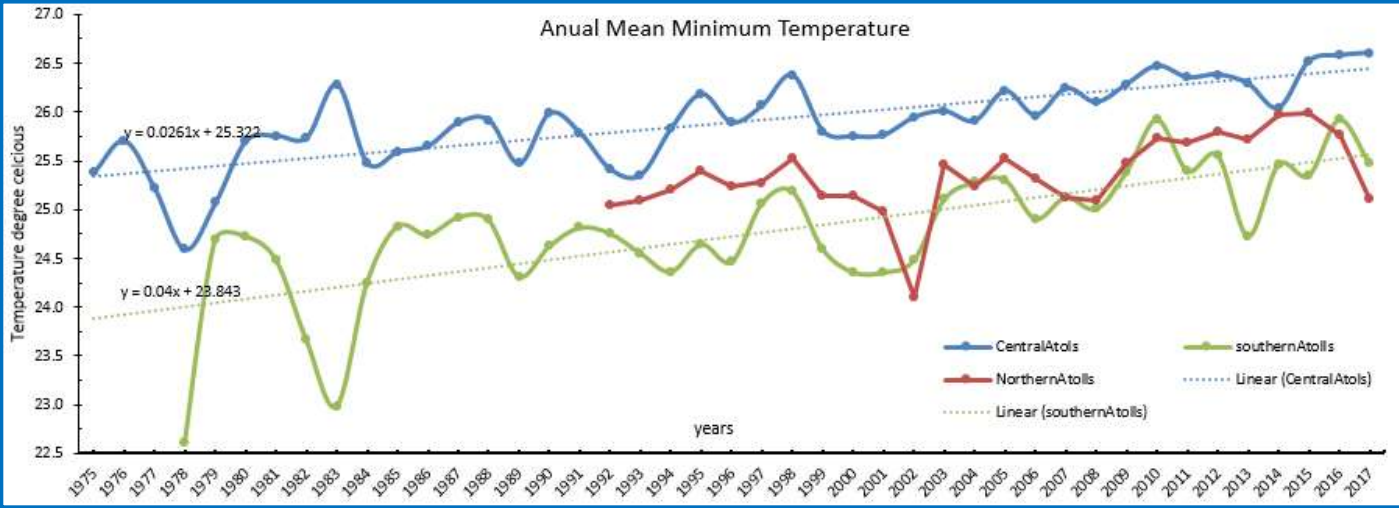
While ENSO neutral, weak El-Nino Or weak La-Nina does not have much influence on the annual rainfall over the country.



Temperature Trends



Both minimum and maximum temperature shows increasing trend.



Thank You