

CLIVAR-GOOS Workshop
**From global to coastal: Cultivating new solutions and partnerships for
an enhanced Ocean Observing System in a decade of accelerating
change**

Rim-Nation and Small Island State Perspectives
MALDIVES

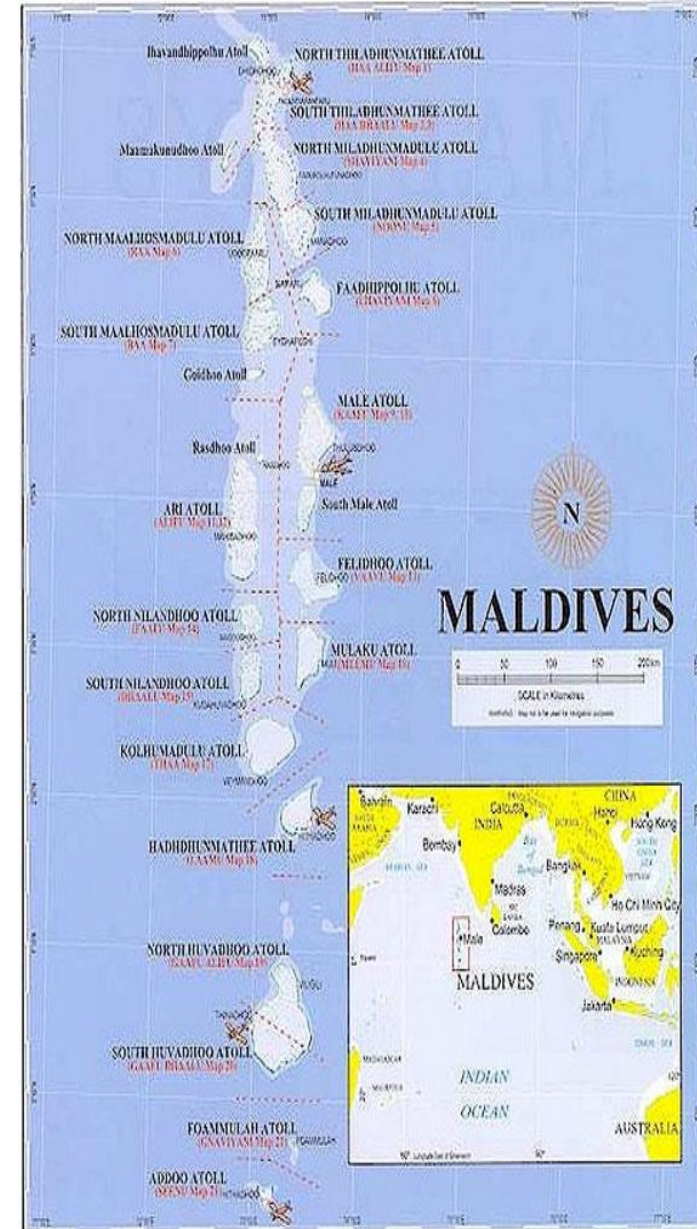
Ahmed Rasheed, Maldives Meteorological Service

**15-17 August 2022,
ICTP, Trieste, Italy and online**

The Maldives



- ✓ Area: 90,000 sq km
- ✓ Population (approximate): 500,000
 - ✓ Total number of islands: 1,200
 - ✓ Number of inhabited islands: 200
- ✓ All these islands on average are less than 1 meter above msl.
 - ✓ No rivers or mountains (some islands have ponds & wetlands)
 - ✓ Highly Vulnerable to climate change & Sea level rise



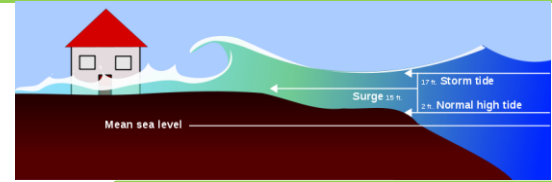
Natural Hazards

- ✓ Heavy rain and Flood
- ✓ Thunderstorms
- ✓ Strong winds and rough seas
- ✓ Tidal and Swell Surge
- ✓ Funnel Cloud (Water Spout and Tornado)
- ✓ Tropical Cyclones.
- ✓ Earthquake and Tsunami
- ✓ Drought (prolonged dry period)



Heavy Rain and Flood

adhoon - 1st Dec 2017 | picture by: M Mivaaz



Source: sun.mv (18/10/2016)

Water Spout and Tornado



Waterspout observed near Sh. Milandhoo on 14 March 2017



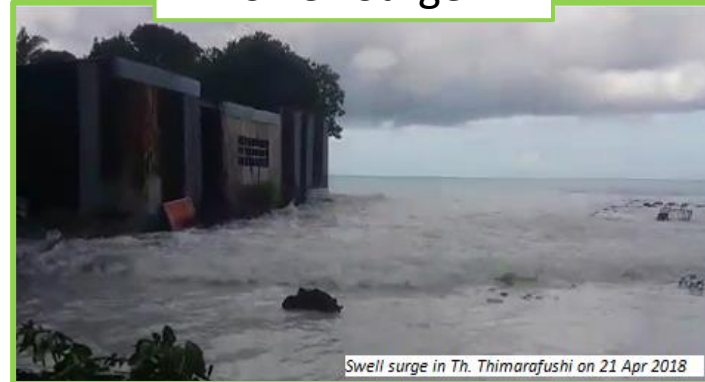
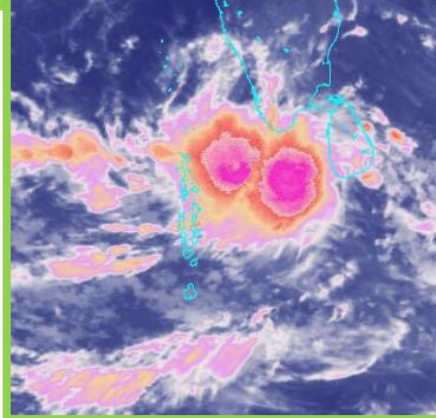
Rough Sea



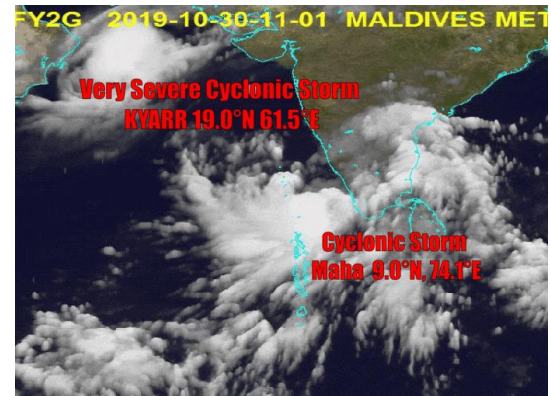
Swell Surge

Tropical Cyclone

FY2-MMS - 30 Nov 2017, TC Ockhi



Swell surge in Th. Thimarafushi on 21 Apr 2018

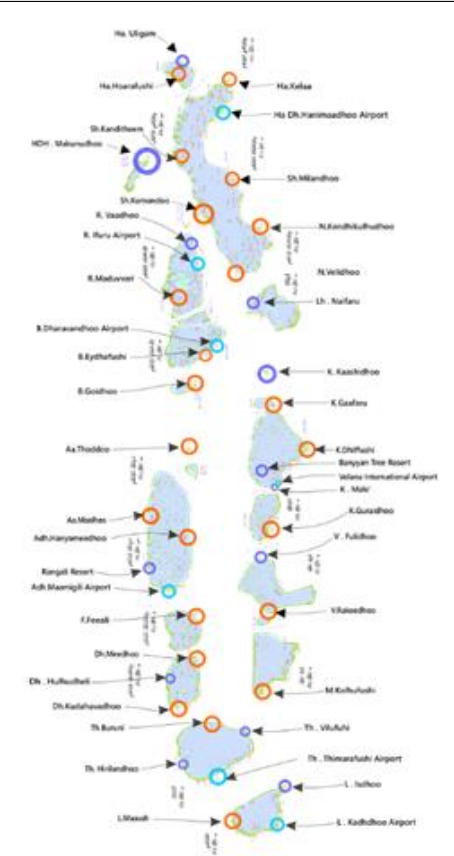


FY2G 2019-10-30-11-01 MALDIVES MET

Data Collection and technical Capacity

Observation Network

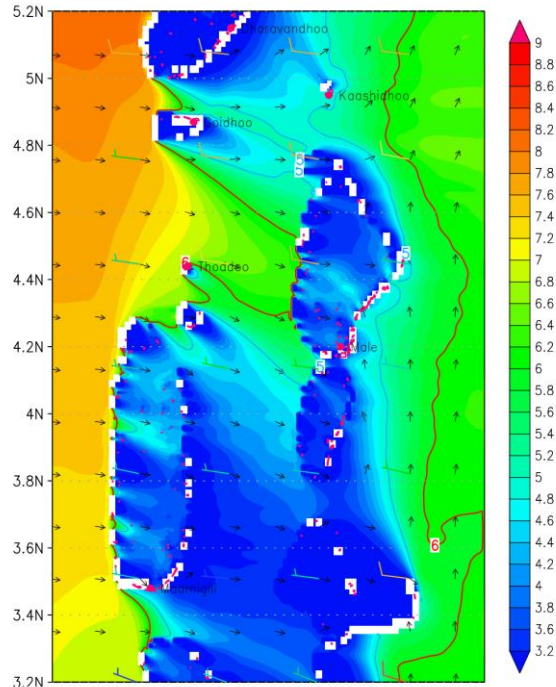
- 5 Meteorological Observatories
- 35 Automatic Weather Station
- 1 Radio Sonde observation, Daily
- 1 Doppler Weather Radar
- 3 Tide gauges
- 1 Satellite picture receiving system (CMACast system).



Numerical Weather prediction & Forecasting Capacity at MMS

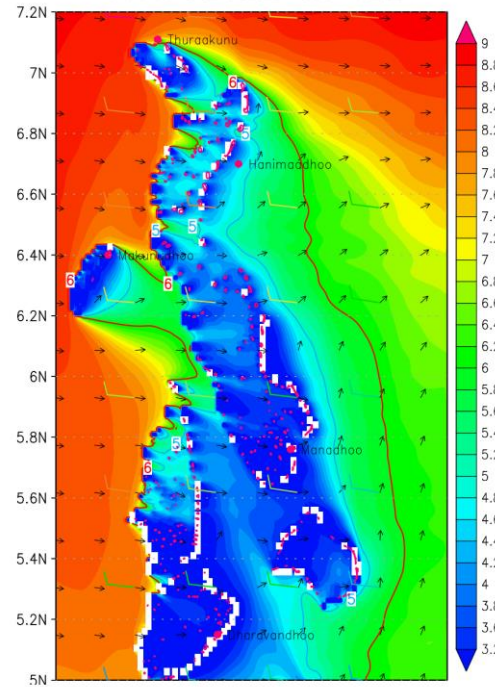
- MMS WRF Model Runs daily
- High resolution Ocean Wave model run daily

WaveHeight(feet) & Dir: N-CentralAtolls
07AUG2022 at 12z



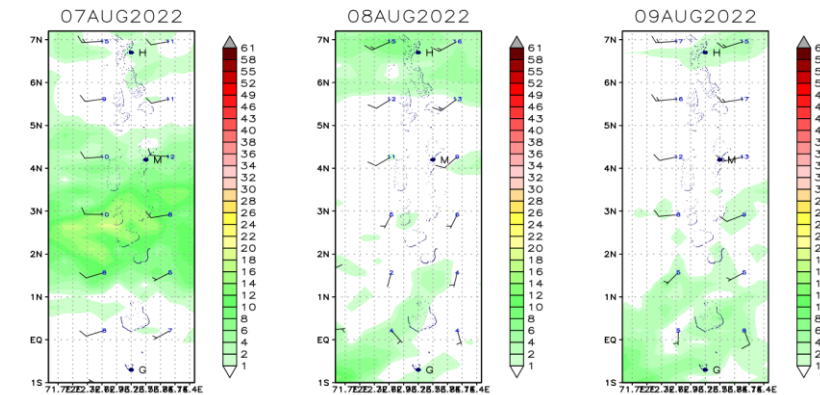
Product of WAVE4M(1/128) OceanModel based on 00Z06AUG2022 run plotted at MMS

WaveHeight(feet) & Dir: NorthernAtolls
07AUG2022 at 12z



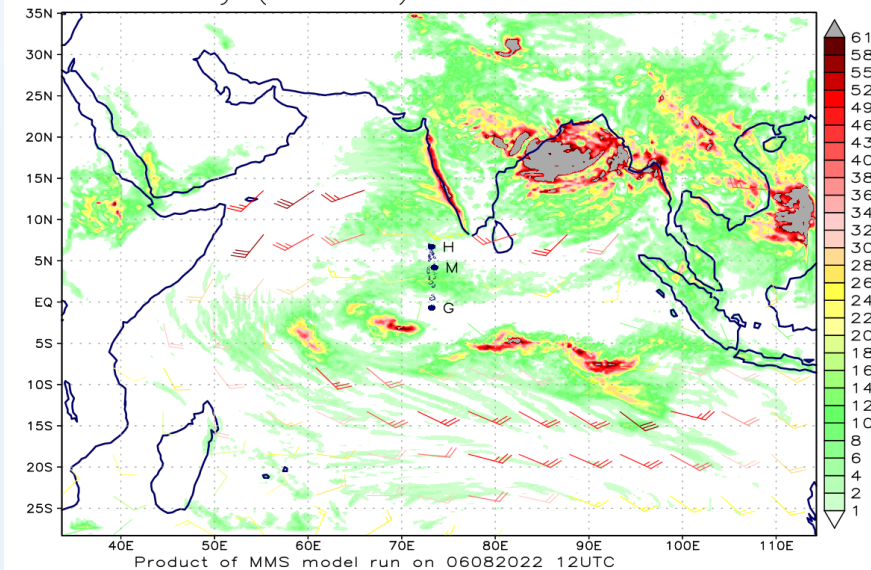
Product of WAVE4M(1/128) OceanModel based on 00Z06AUG2022 run plotted at MMS

Forecast Daily (00-23Z) Rainfall in millimeters



Product of MMS model run on 06082022 12UTC

Forecast Daily (00-23Z) rainfall on ??? 07AUG2022



Product of MMS model run on 06082022 12UTC



Numerical Weather prediction & Forecasting Capacity at MMS

NWP products from other sources



Integrated Ocean Information and Forecast System Maldives



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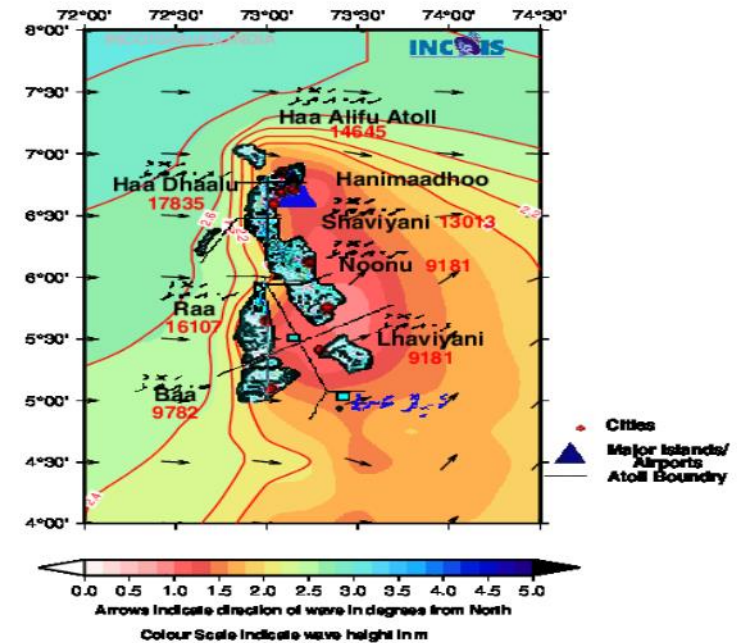
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Forecast Products

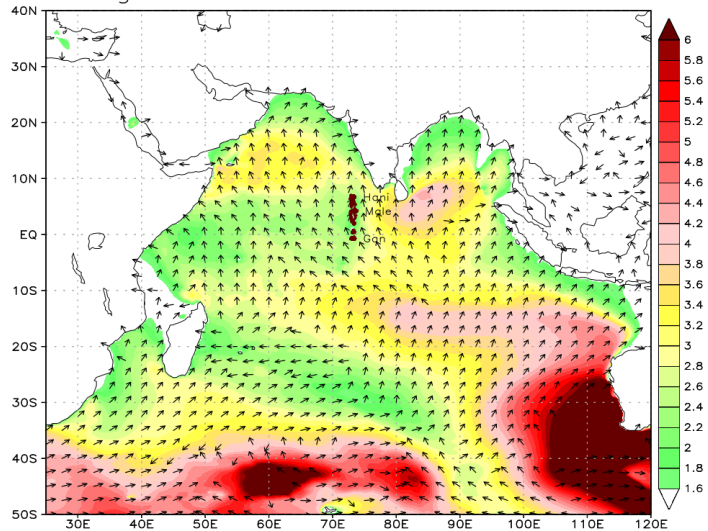
- Wave
- Wave period
- Swell
- Swell period
- Wind
- Sea Surface Temperature
- Mixed Layer Depth
- Surface Currents
- Location Specific
- High Wave Alert

Significant Wave Height (m) and Direction (°)

Forecast for 05:30 SCT 07 AUG 2022



SigWaveHeight & Direction at 00Z03AUG2022



BoM modelDataSet ID:Y35000.APS3 initial at 12 UTC on 02082022

10

Thank you