## Weather Forecast for Indian Ocean Region – April

1. Indian Ocean Region (IOR) is divided into four broad regions as shown in **Figure 1** for providing a comprehensive weather forecast. Forecast for each region covers synoptic discussion, surface winds, wave height & direction and surface currents. The region wise forecast for the month of April is as follows: -

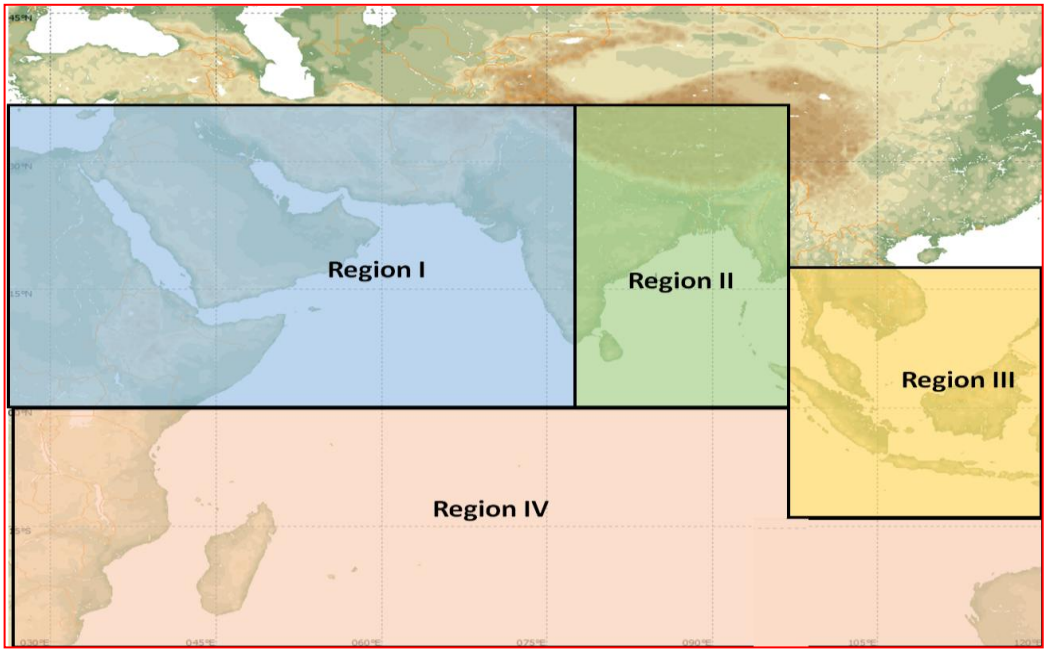


Fig 1. Forecast Regions

(a) **Region I (Arabian Sea)**

**Synoptic Discussion**. April is associated with commencement of convective activity over the region. Depressions or Tropical Cyclones do not generally form during this month. During April, the sea surface temperature is 26-28$^{o}$ C over north Arabian sea and gradually increases upto 30$^{o}$ C southwards. The average pressure distribution at mean sea level varies to the order of 02 - 04 hPa from north to south.

| Sub Region I | Weather Parameter | Forecast |
|---|---|---|
| Arabian Sea | Surface winds | SW-W/ 05-10 knots in northern Arabian sea<br>NNW-NNE/ 05-10 knots in southern Arabian sea |
| | Wave height & direction | SSE-SSW/ 0.5 – 0.8 m in northern Arabian sea<br>SE-SSW/ 0.5 – 1.0 m in southern Arabian sea |
| | Surface Current | NE-SE/ 0.4 - 0.8 knots in northern Arabian sea<br>SW-W/ 0.4 – 0.6 knots in southern Arabian sea |
| Gulf of Oman | Surface winds | WNW/ 05-10 knots in western section of Gulf<br>WSW-W/ 05-10 knots in eastern section of Gulf |
| | Wave height & direction | WNW-NW/ 0.2 - 0.4 m in western section of Gulf<br>WSW-WNW/ 0.2-0.4 m in eastern section of Gulf |
| | Surface Current | SW - NW/ 0.4 knots in western section of Gulf<br>N-NE/ 0.4 - 0.8 knots in eastern section of Gulf |

| | **Sub Region I** | **Weather Parameter** | **Forecast** |
|---|---|---|---|
| | Gulf of Aden | Surface winds | NNW-NNE/ 05-10 knots in western section of Gulf<br>E-SE/ 05-10 knots in eastern section of Gulf |
| | | Wave height & direction | NW-N/ 0.4 – 0.8 m in western section of Gulf<br>E – SE/ 0.4 – 0.8 m in eastern section of Gulf |
| | | Surface Current | NW-NE/ 0.4 – 0.6 knots in western section of Gulf<br>NNW - NW/ 0.6 – 0.8 knots in eastern section of Gulf |
| | Equatorial Indian Ocean | Surface winds | NNW-NNE/05-10 knots between 45 $^{o}$E -77$^{o}$E<br>WSW-W/ 05-10 knots between 77 $^{o}$E -100 $^{o}$E |
| | | Wave height & direction | SSE - SSW/ 1.2 -1.6 m between 45 $^{o}$E - 77$^{o}$E<br>SSW-SW/ 1.4 -1.8 m between 77 $^{o}$E -100 $^{o}$E |
| | | Surface Current | WSW-W / 0.4 – 0.6 knots between 45 $^{o}$E - 77$^{o}$E<br>E - ENE/ 0.6 – 1.0 knots between 77 $^{o}$E -100 $^{o}$E |
| (b) | **Region II (Bay of Bengal)** | | |
| | **Synoptic Discussion**. Most of the disturbances in this month originate between 8 and 13$^{0}$ N and East of 85$^{0}$ E. Their direction of movement is initially towards North West or North later they recurve towards North East and strike the Arakan coast. The cyclonic disturbances generally form during the second half of April. | | |
| | **Sub Region II** | **Weather Parameter** | **Forecast** |
| | Andaman Sea | Surface winds | W-WNW / 05-10 knots in northern section<br>WSW / 05-10 knots in southern section |
| | | Wave height & direction | SSW-SW / 0.4 – 0.8 m in northern section<br>SSW / 1.4-1.6 m in southern section |
| | | Surface Current | NW-N /0.4 – 0.6 knots in northern section<br>E-ENE/ 0.4 - 0.8 knots in southern section |
| | Bay of Bengal | Surface winds | WSW-WNW/ 05-10 knots in northern Bay of Bengal<br>ESE/ 05-10 knots in southern Bay of Bengal |
| | | Wave height & direction | S-SSW/ 0.8-1.2 m in northern Bay of Bengal<br>SW/ 1.0-1.4 m in southern Bay of Bengal |
| | | Surface Current | NE-SE/ 0.8 – 1.4 knots in northern Bay of Bengal<br>WSW-W/ 0.4 – 0.6 knots in southern Bay of Bengal |

(c) **Region III (Southeast Asia)**

**Synoptic Discussion**. In April, the average pressure distribution at mean sea level varies to the order of 02 - 04 hPa from north to south. In general, isolated localised thunderstorms/showers over Sumatra island and Straits of Malacca occur due to convective activity over the region. The swells are from NE direction over most parts of the open sea. Surface current is generally SW wards along the western part of south China sea for most duration of the month.

| Sub Region III | Weather Parameter | Forecast |
|---|---|---|
| Southern parts of South China Sea | Surface winds | ENE - ESE/ 05-10 knots |
| | Wave height & direction | E-ESE/ 0.6-1.0 m |
| | Surface Current | SE-SW/ 0.4 – 0.8 knots |
| Malacca Strait | Surface winds | WSW /5-10 knots in northern strait<br>SSE-S/ 5-10 knots in southern strait |
| | Wave height & direction | NW/0.2-0.4 m in northern strait<br>ENE/ 0.2-0.4 m in southern strait |
| | Surface Current | NE - E / 1.4 - 2.0 knots in northern strait<br>SW / 0.8 – 1. 4 knots in southern strait |
| Southern Sulu Sea - Northern Celebes Sea | Surface winds | ENE-ESE / 05 - 10 knots |
| | Wave height & direction | ENE-ESE /0.5 m |
| | Surface Current | SW-W / 0.4 – 0.8 knots |

(d) **Region IV (South Indian Ocean)**

**Synoptic Discussion**. During April, the Mean Sea Level Pressure (MSLP) over central parts of the Southern IOR is generally 1020 hPa and gradually decreases northwards. The pressure gradient over this region is around 8-10 hPa. High pressure cell shift towards west and is generally seen between 30°- 40°S and 60°-110°E. MSLP values further decreases to less than 988 hPa south of 60°S latitudes. Tropical disturbances are relatively rare in this month, However based on climatological data they originate around 91°E, move in westerly direction and strike east coast of Madagascar Islands or recurve in south easterly direction and strike Mauritius Islands and adjoining areas. They have a tendency to weaken and dissipate over the sea area in the course of their movement.

| Sub Region IV | Weather Parameter | Forecast |
|---|---|---|
| South Indian Ocean | Surface winds | E-SE/12-17 knots |
| | Wave height & direction | SE-S/ 2.0 - 2.5 m |
| | Surface Current | NE-E/ 0.6 – 1.0 knots |

| | Sub Region IV | Weather Parameter | Forecast |
|---|---|---|---|
| | West Australian coast | Surface winds | SE - S/ 07-12 knots in western coast<br>E-SE/10-15 knots in north western coast |
| | | Wave height & direction | SW/ 2.5-3.0 m in western coast<br>S-SW/ 1.8-2.2 m in north western coast |
| | | Surface Current | SE - SW/ 0.4 – 0.6 knots in western coast<br>S - SW/ 0.4 – 0.6 knots in north western coast |
| | Somali Coast | Surface winds | ESE-SSE / 05 - 10 knots |
| | | Wave height & direction | SE/0.6-0.8 m |
| | | Surface Current | NW-NE/ 0.6 – 1.0 knots |
| | Central African Coast/ Indian Ocean | Surface winds | E - ESE/ 10-15 knots |
| | | Wave height & direction | S-SE/ 2.4 -2.8 m |
| | | Surface Current | W-WSW/ 0.4 – 0.8 knots |
| | Mozambique Channel | Surface winds | SE - S/ 05-10 knots |
| | | Wave height & direction | S-SSW/ 1.8-2.2 m |
| | | Surface Current | SW-NW/ 0.8 – 1.2 knots |

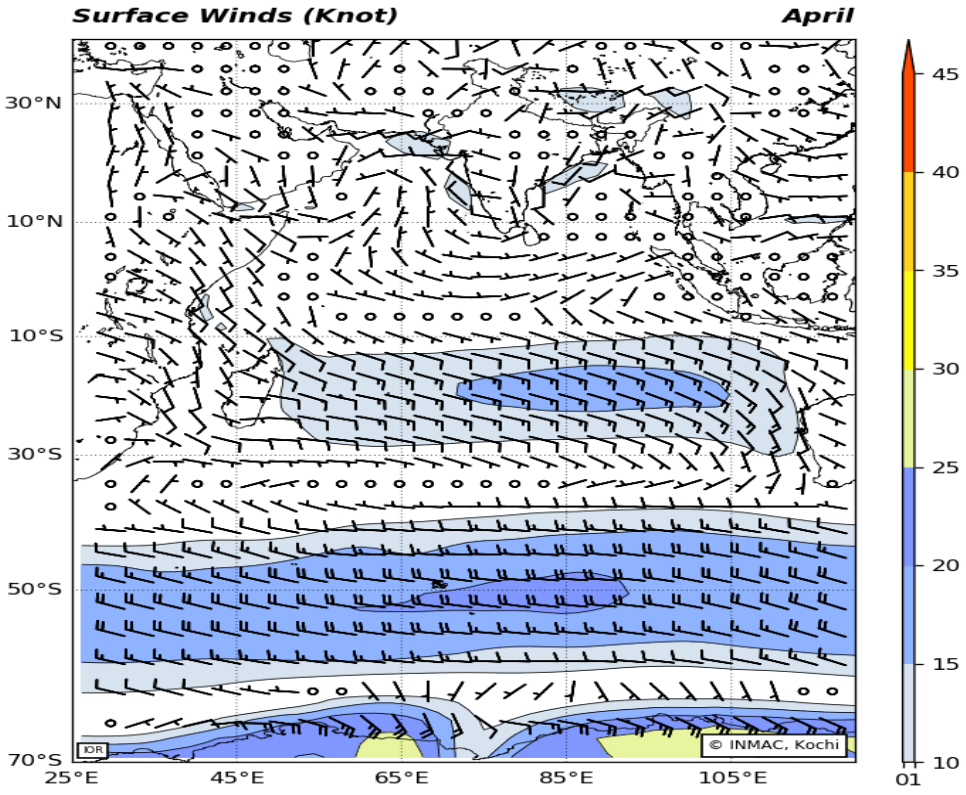


Fig 2. Surface Wind and Direction (Kt) over IOR - Apr

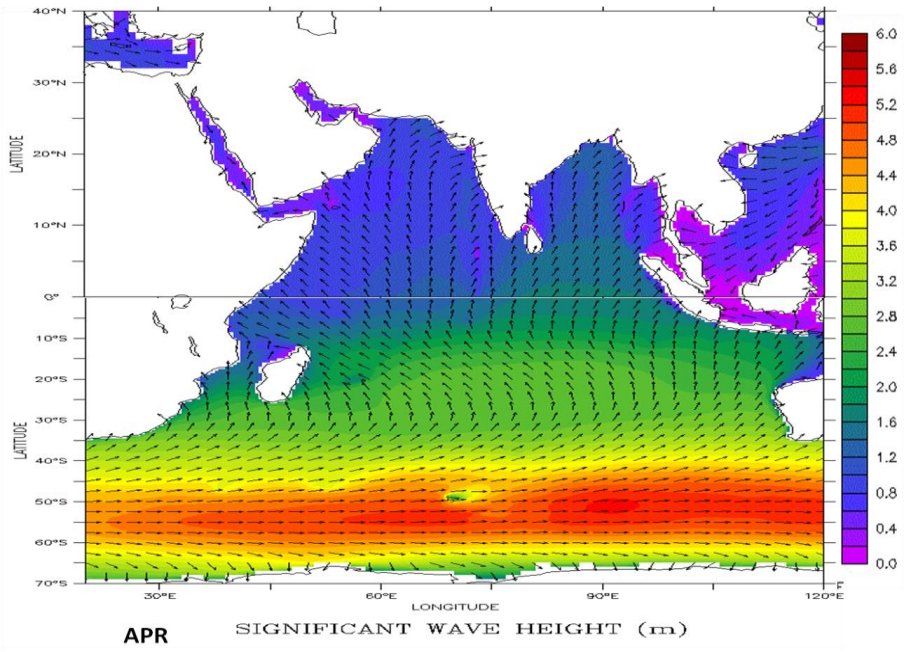


Fig 3. Significant Wave Height and Direction (m) over IOR - Apr

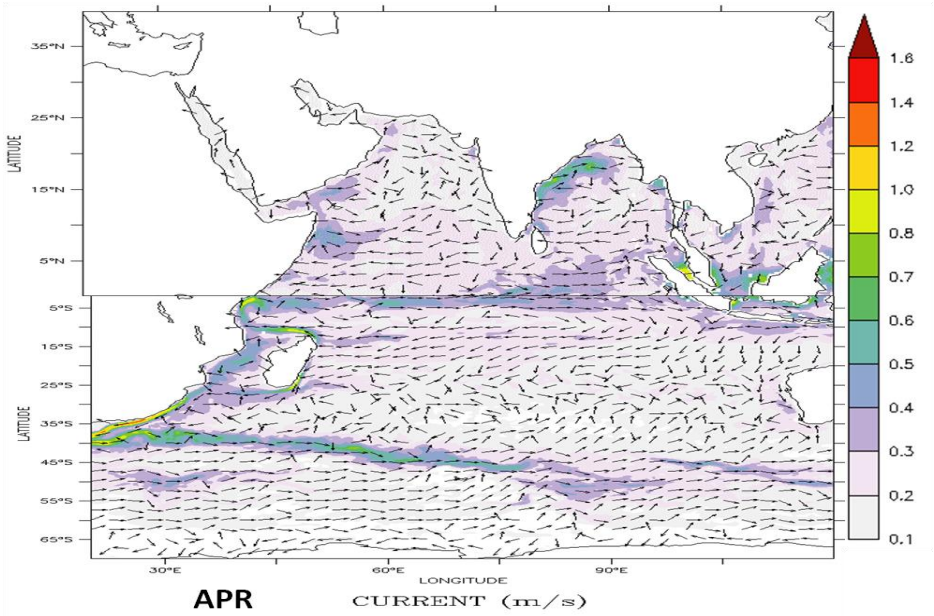


Fig 4. Surface Current (m/s) over IOR - Apr