

Weather Forecast for Indian Ocean Region – Jan

1. The Indian Ocean Region (IOR) is divided into four broad sub-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 weather forecast for the month of **January** is as follows: -

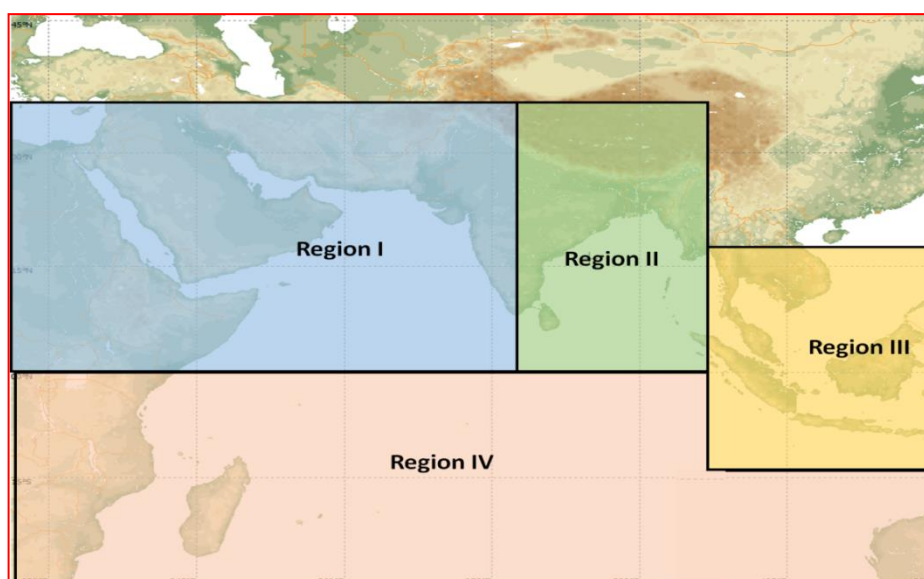


Fig 1. Forecast Regions

(a)	<u>Region I (Arabic Sea)</u>		
	<p><u>Synoptic Discussion.</u> The weather is relatively dry and cool over entire Arabian Sea (AS) and the Mean Sea Level Pressure (MSLP) over Northern AS is around 1020 hPa. The occurrence of Tropical Disturbances is unlikely over AS during this month. The surface winds to south of 25°N latitude are mainly NEly/ 10-15 Knots, while calm winds are experienced over the North AS. The rainfall activity over north AS, to the North of 20°N latitude is primarily under the influence of a passing Western Disturbance. Sea conditions are Relatively Smooth (Sea State 2) over North AS and Slight (Sea State 3) over the South AS. Significant Wave Height is about 0.5 m over North AS and increases southward to 1.0-1.5 m over the South AS.</p>		
	<u>Region I</u>	<u>Weather Parameter</u>	<u>Forecast</u>
Arabian Sea		Surface Winds	NE/ 05-10 Knots in Northern Arabian Sea NE/ 10-15 Knots in Southern Arabian Sea
		Wave Height & Direction	N-NE/ 0.6-1.0 m in Northern Arabian Sea N-NE/ 0.8-1.6 m in Southern Arabian Sea
		Surface Current	W-NW/ 0.2-0.4 Knots in Northern Arabian Sea W-NW/ 0.2-0.6 Knots in Southern Arabian Sea
Gulf of Oman		Surface Winds	NW/ 05-10 Knots in Western Section of the Gulf NW-N/ 05-10 Knots in Eastern Section of the Gulf
		Wave Height & Direction	NW/ 0.4-1.0 m in Western Section of the Gulf SW/ 0.4-1.0 m in Eastern Section of the Gulf
		Surface Current	S-SW/ 0.2-0.4 Knots in Western Section of the Gulf SW/ 0.2-0.4 Knots in Eastern Section of the Gulf

<u>Region I</u>	<u>Weather Parameter</u>	<u>Forecast</u>
Gulf of Aden	Surface Winds	N-NE/ 05-10 Knots in Western Section of the Gulf NE-E/ 05-10 Knots in Eastern Section of the Gulf
	Wave Height & Direction	NW/ 0.4-1.0 m in Western Section of the Gulf E/ 0.6-1.0 m in Eastern Section of the Gulf
	Surface Current	E-SE/ 0.1-0.2 Knots in Western section of the Gulf W-NW/ 0.2-0.6 Knots in Eastern section of the Gulf
Equatorial Indian Ocean	Surface Winds	NE/ 05-10 Knots between 45°E -77°E N-NE/05-10 Knots between 77°E -100°E
	Wave Height & Direction	SE-S/ 0.8-1.6 m between 45°E - 77°E S-SW/ 1.4-1.8 m between 77°E -100°E
	Surface Current	W-NW/ 0.2-0.6 Knots between 45°E - 77°E W-NW/ 0.2-0.6 Knots between 77°E -100°E
(b)	<u>Region II (Bay of Bengal)</u>	
<p><u>Synoptic Discussion.</u> Fair weather conditions prevail over most parts of Bay of Bengal during the month with surface air temperatures of the order of 20-24°C. Generally NEly winds of the order of 05 - 10 Knots prevail over North Bay and 10 - 15 Knots over Central and South Bay. During this month, the probability of formation of Depression/ Cyclonic Storm is low due to low Sea Surface Temperatures (SST) and stable atmospheric conditions. However, squally weather accompanied with thunderstorms is observed over extreme southern parts of Bay and off East Coast of Sri Lanka. The Sea State over North & Central Bay is of the order of 1-2 and increases slightly up to 3 over South BOB.</p>		
<u>Region II</u>	<u>Weather Parameter</u>	<u>Forecast</u>
Andaman Sea	Surface Winds	N-NE/ 05-10 Knots in Northern Section NE/ 05-10 Knots in Southern Section
	Wave Height & Direction	S-SW/ 0.4-1.0 m in Northern Section S-SW/ 0.8-1.2 m in Southern Section
	Surface Current	S-SW/ 0.1-0.3 knots in Northern Section SWW/ 0.2-0.4 knots in Southern Section
Bay of Bengal	Surface Winds	NE/ 05-10 knots in Northern Bay of Bengal NE/ 10-15 knots in Southern Bay of Bengal
	Wave Height & Direction	SE/ 1.0-1.4 m in Northern Bay of Bengal SE/ 1.0-1.8 m in Southern Bay of Bengal
	Surface Current	W-NW/ 0.2-0.4 knots in Northern Bay of Bengal W-NW/ 0.2-0.6 knots in Southern Bay of Bengal
(c)	<u>Region III (Southeast Asia)</u>	
<p><u>Synoptic Discussion.</u> During this month, slack pressure gradient of the order of 2-4 hPa prevails over the region with an average MSLP of 1020-1022 hPa. Surface winds are NE-Ely of the order 15-20 Knots over the Southern parts of South China Sea. Isolated convective activity is seen over Sumatra island and Straits of Malacca during</p>		

late evening/ night hours. The swell waves from N-NE direction with height of the order of 1.5 - 2.5 m prevail over the region. In addition, the surface current in SW direction over South China Sea is observed for most duration of the month.		
<u>Region III</u>	<u>Weather Parameter</u>	<u>Forecast</u>
Southern parts of South China Sea	Surface Winds	NE/15 - 20 Knots
	Wave Height & Direction	NE/ 1.2-2.4 m
	Surface Current	SW-W / 0.2-0.6 Knots
Malacca Strait	Surface Winds	NE /05-10 knots in Northern Straits N-NE/05-10 knots in Southern Straits
	Wave Height & Direction	NW-N/ 0.2-0.8 m in Northern Straits NE/ 0.4-0.8 m in Southern Straits
	Surface Current	NE / 0.3-1.0 Knots in Northern Straits N-NE / 0.3-1.0 Knots in Southern Straits
Southern Sulu Sea - Northern Celebes Sea	Surface Winds	N-NE / 10-15 Knots
	Wave Height & Direction	NE /0.4-1.0 m
	Surface Current	E-SE/ 0.3-1.0 Knots
(d)	<u>Region IV (South Indian Ocean)</u>	
<u>Synoptic Discussion.</u> The Inter Tropical Convergence Zone (ITCZ) shifts South of Equator and is located at about 10-12°S. The region near ITCZ experiences light winds and convective activity and formation of Tropical Disturbances/ Storms in the vicinity. These Disturbances initially track W-SW ward and later re-curve towards S-SE around 15-20°S. E-SEly winds of the order of 10-15 Knots prevail over Southwest Coast of Africa & Coastal Madagascar and Calm/ Variable winds prevail near the Mozambique Channel. Strong Westerly winds regime (30-40 Knots), known as Roaring Forties prevail to the South of 35°S.		
<u>Region IV</u>	<u>Weather Parameter</u>	<u>Forecast</u>
South Indian Ocean	Surface Winds	W-NW/ 05-10 Knots
	Wave Height & Direction	S-SW/ 1.0-2.0 m
	Surface Current	E - SE/ 0.2-0.6 Knots
West Australian coast	Surface Winds	SE-S/ 10-15 Knots in Western Coast SW-W/ 05-10 knots in Northwestern Coast
	Wave Height & Direction	S-SW/ 2.2-3.4 m in Western Coast S-SW/ 2.0-3.2 m in Northwestern Coast
	Surface Current	SW-W/ 0.1-0.3 Knots in Western Coast NE-E/ 0.1-0.3 Knots in Northwestern Coast
Somali Coast	Surface Winds	N-NE/ 05-10 Knots
	Wave Height &	NE/ 0.8-1.2 m

		Direction	
		Surface Current	SE-S/ 0.2-0.6 Knots
Central African Coast/ Indian Ocean		Surface Winds	E - SE/ 10-15 Knots
		Wave Height & Direction	SE/ 1.8-2.6 m
		Surface Current	SW-W/ 0.2-0.6 Knots
Mozambique Channel		Surface Winds	NW-N/ 05-10 Knots
		Wave Height & Direction	NE/ 0.8-2.0 m
		Surface Current	S-SW/ 0.2-0.7 Knots

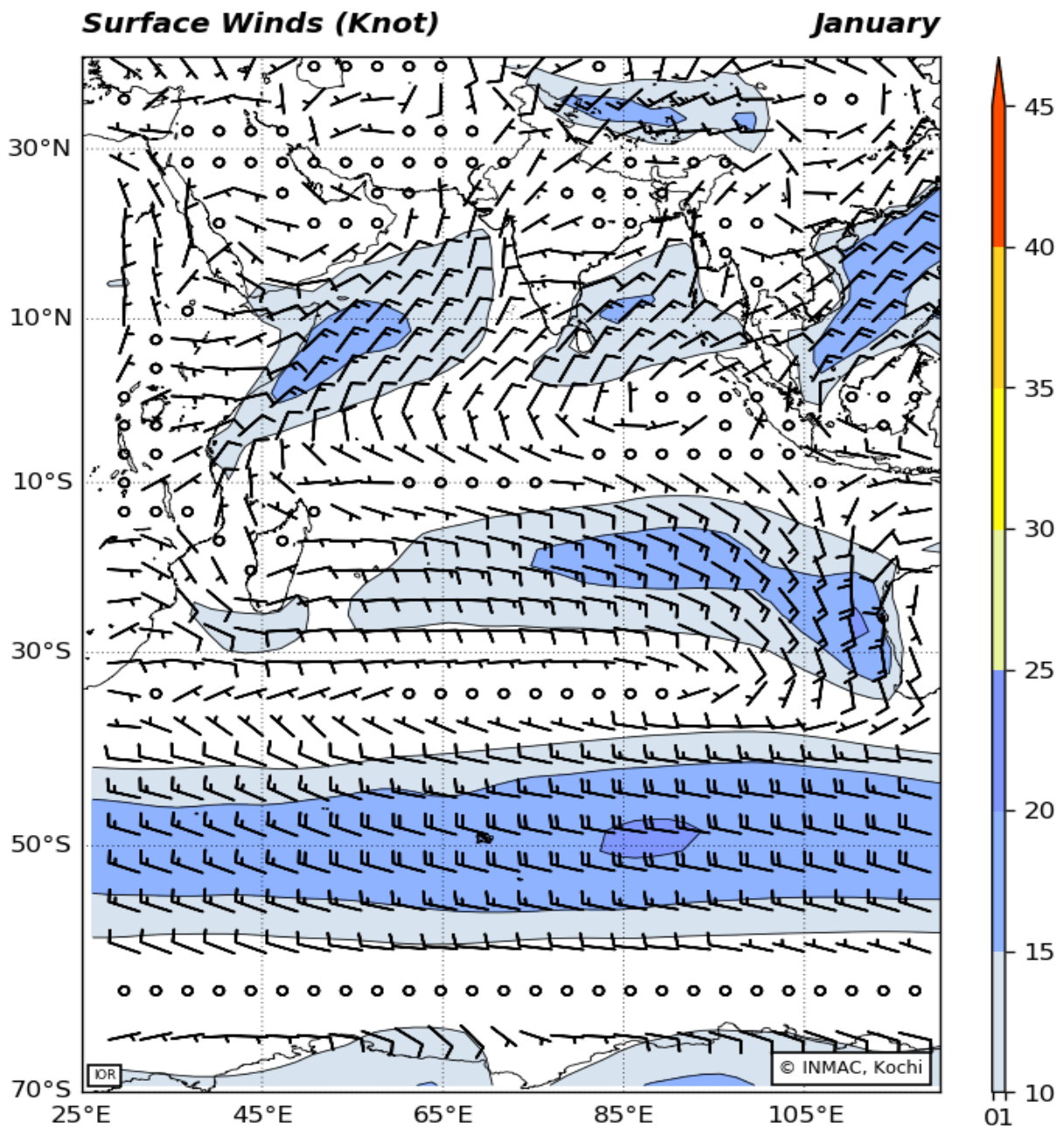


Fig 2. Surface Wind and Direction (Kt) over IOR - Jan

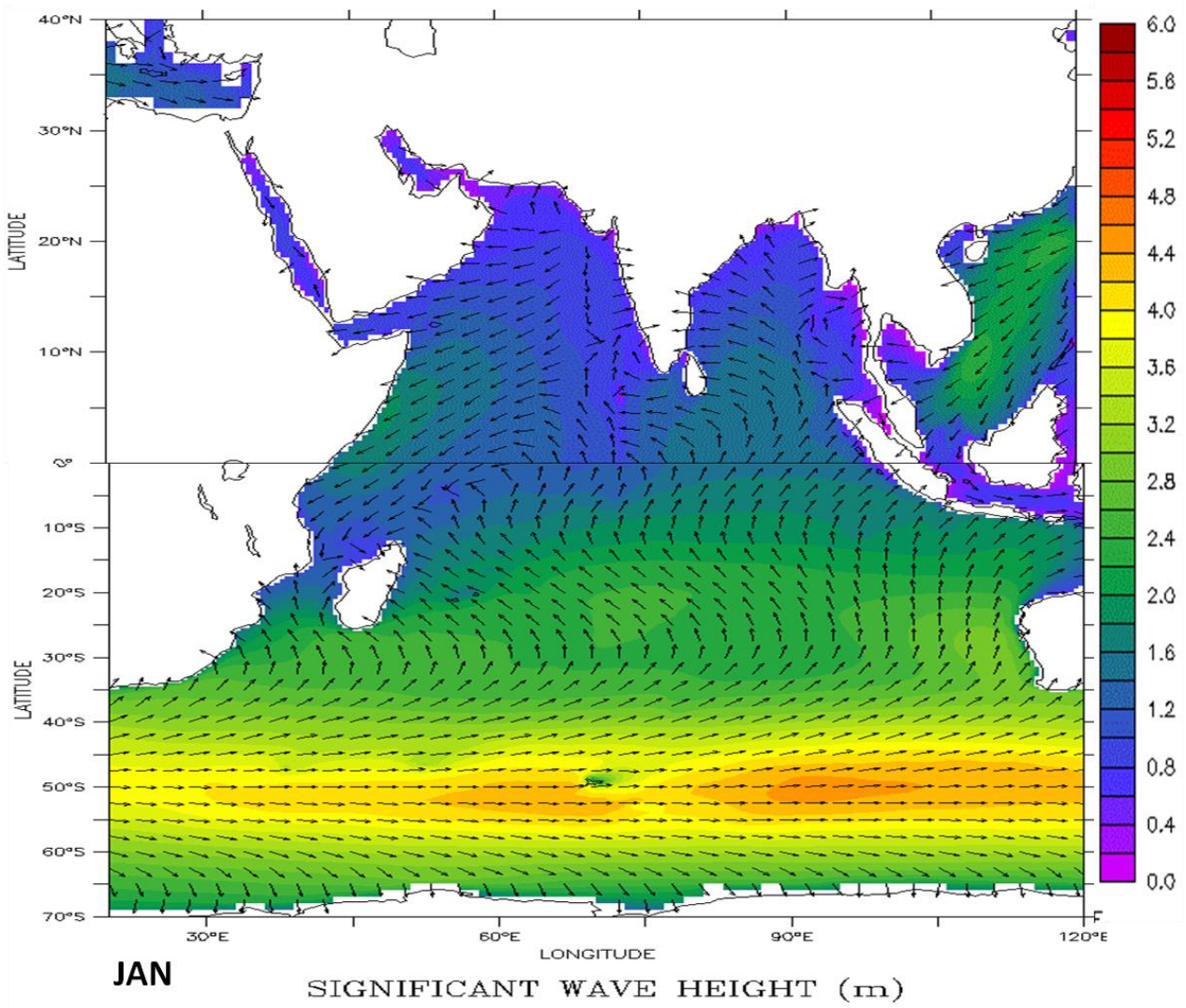


Fig 3. Significant Wave Height and Direction (m) over IOR- Jan

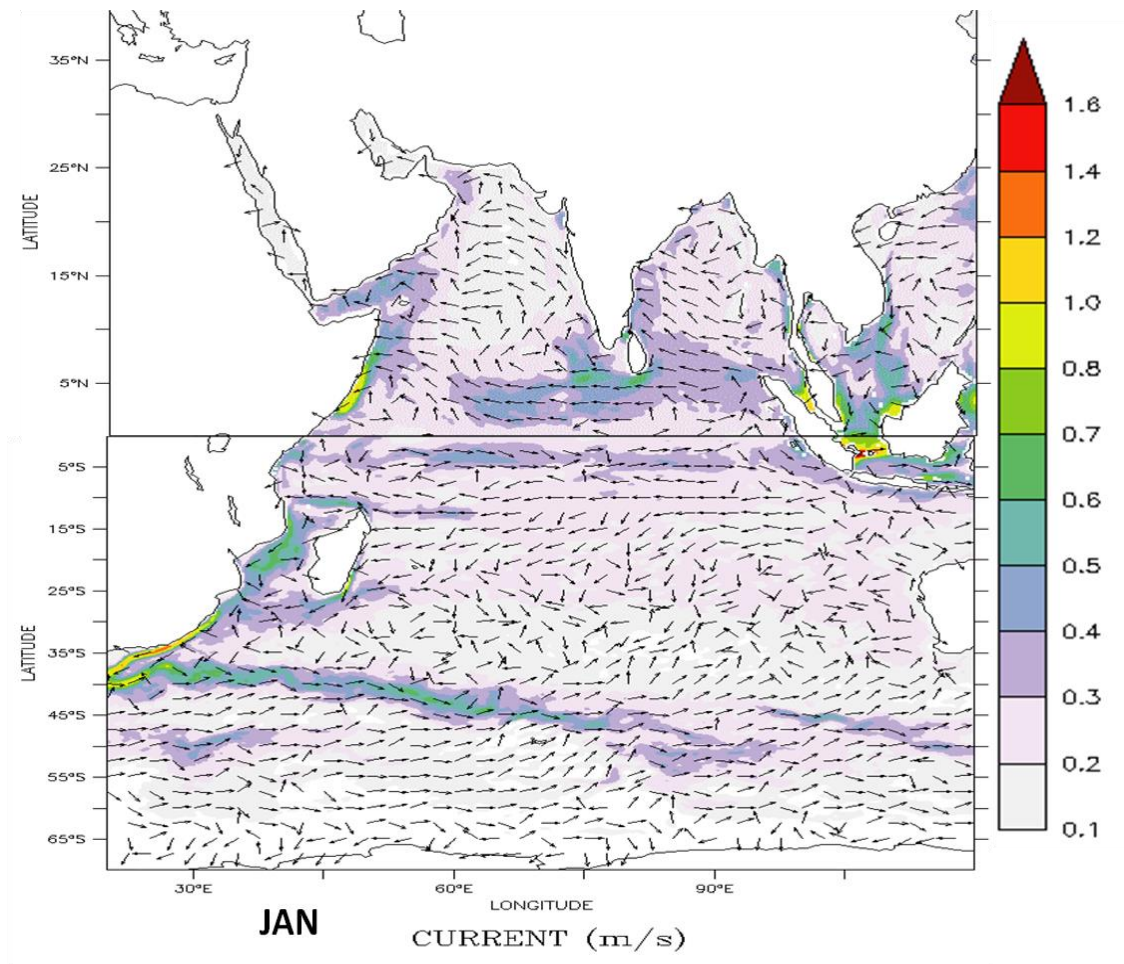


Fig 4. Surface Current (m/s) over IOR - Jan