



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

SPECIAL TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI 10-05-2013

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 24 HOURS ISSUED AT 1200 UTC OF 10 MAY, 2013 BASED ON 0900 UTC OF 10 MAY, 2013.

LATEST SATELLITE IMAGERY AND OBSERVATIONS INDICATE THAT A DEPRESSION HAS FORMED OVER SOUTHEAST BAY OF BENGAL AND LAY CENTRED AT 0900 UTC OF TODAY, THE 10TH MAY 2013 NEAR LATITUDE 05.0⁰N AND LONGITUDE 92.0⁰E, ABOUT 450 KM SOUTH-SOUTHWEST OF CAR NICOBAR(43367), 1250 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1550 KM SOUTHEAST OF CHENNAI (43279) AND 1900 KM SOUTH OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 24 HRS AND SUBSEQUENTLY INTO A CYCLONIC STORM. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 48 HRS. AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 1.5. INTENSE TO VERY INTENSE CONVECTION SEEN OVER BAY OF BENGAL BETWEEN LAT 02.0⁰S AND 10.0⁰N AND LONG 82.0⁰E AND 96⁰E. THE ASSOCIATED CONVECTION HAS INCREASED GRADUALLY WITH RESPECT TO HEIGHT AND ORGANISATION DURING PAST 12 HRS. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 25 KNOTS GUSTING TO 35 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS ROUGH TO VERY ROUGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1004 HPA.

REMARKS:

SCATTEROMETRY DATA INDICATES THE CYCLONIC CIRCULATION OVER THE REGION AND ASSOCIATED WIND SPEED TO BE ABOUT 25-30 KNOTS WIND SPEED IS RELATIVELY HIGHER IN SOUTHERN SECTOR IN ASSOCIATION WITH CROSS EQUATORIAL FLOW.

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER GULF OF THAILAND. HENCE DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER IN PAST 24 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE. THE SEA HEIGHT ANOMALY IS ABOUT 15M. HOWEVER, THE VERTICAL WIND SHEAR OF HORIZONTAL WIND HAS INCREASED AND IS ABOUT 20-30 KNOTS (HIGH). THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 48 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE GFS SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF & UKMO DO NOT SUGGEST SUCH SEVERITY IN INTENSITY. IMD'S DYNAMICAL STATISTICAL MODEL SUGGESTS INTENSIFICATION INTO A CYCLONIC STORM.

(M.MOHAPATRA)

TOO:1800 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

SPECIAL TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI 10-05-2013

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 24 HOURS ISSUED AT 15UTC OF 10 MAY, 2013 BASED ON 1200 UTC OF 10 MAY, 2013.

THE DEPRESSION OVER SOUTHEAST BAY OF BENGAL MOVED SLIGHTLY NORTHWARDS, INTENSIFIED INTO A DEEP DEPRESSION AND LAY CENTRED AT 1200 UTC OF TODAY, THE 10TH MAY 2013 OVER SOUTHEAST BAY OF BENGAL NEAR LATITUDE 05.5⁰N AND LONGITUDE 92.0⁰E, ABOUT 400 KM SOUTH-SOUTHWEST OF CAR NICOBAR (43367), 1200 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1550 KM SOUTHEAST OF CHENNAI (43279) AND 1850 KM SOUTH OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 48 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.0. INTENSE TO VERY INTENSE CONVECTION SEEN OVER BAY OF BENGAL BETWEEN LAT 02.0⁰S AND 10.0⁰N AND LONG 82.0⁰E AND 96⁰E. THE ASSOCIATED CONVECTION HAS INCREASED GRADUALLY WITH RESPECT TO HEIGHT AND ORGANISATION DURING PAST 12 HRS. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 30 KNOTS GUSTING TO 40 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS VERY ROUGH TO HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA.

Based on latest analysis with NWP models and other conventional techniques, estimated track and intensity of the system are given in the Table below:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
10-05-2013/1200	05.5/92.0	50-60 gusting to 70	Deep Depression
10-05-2013/1800	06.0/91.5	55-65 gusting to 75	Deep Depression
11-05-2013/0000	06.5/91.0	60-70 gusting to 80	Cyclonic Storm
11-05-2013/0600	07.1/90.5	70-80 gusting to 90	Cyclonic Storm
11-05-2013/1200	07.7/90.0	80-90 gusting to 100	Cyclonic Storm
12-05-2013/0000	09.0/89.2	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/1200	10.5/88.6	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/0000	12.0/88.0	110-120 gusting to 130	Severe Cyclonic Storm
13-05-2013/1200	14.0/89.0	120-130 gusting to 145	Very severe Cyclonic Storm

REMARKS:

SCATTEROMETRY DATA INDICATES THE CYCLONIC CIRCULATION OVER THE REGION AND ASSOCIATED WIND SPEED TO BE ABOUT 25-30 KNOTS WIND SPEED IS RELATIVELY HIGHER IN SOUTHERN SECTOR IN ASSOCIATION WITH CROSS EQUATORIAL FLOW.

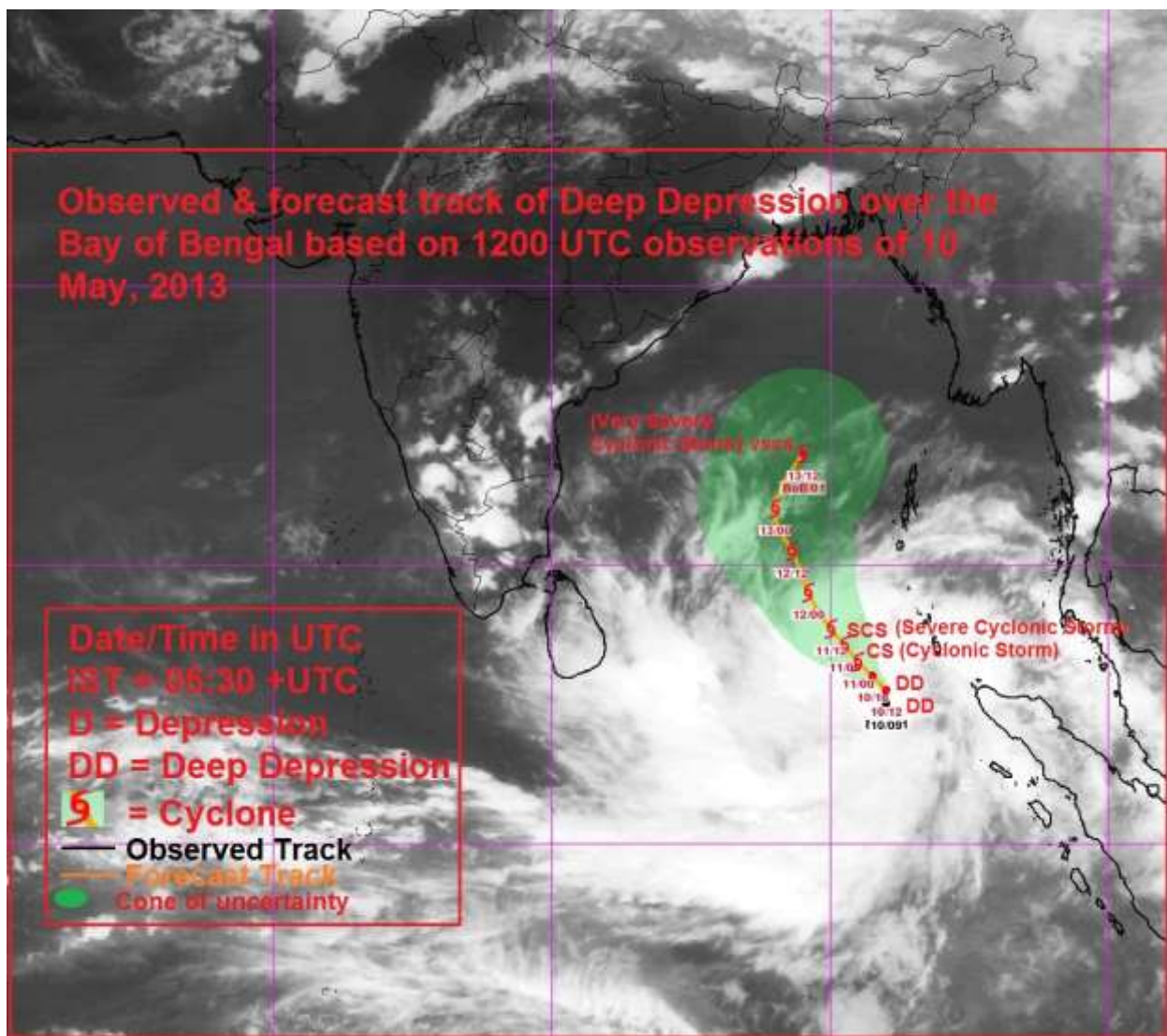
THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER GULF OF THAILAND.HENCE DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER IN PAST 24 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE. THE SEA HEIGHT ANOMALY IS ABOUT 15M. HOWEVER, THE VERTICAL WIND SHEAR OF HORIZONTAL WIND HAS INCREASED AND IS

ABOUT 20-30 KNOTS (HIGH). THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 48 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE GFS SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF & UKMO DO NOT SUGGEST SUCH SEVERITY IN INTENSITY. IMD'S DYNAMICAL STATISTICAL MODEL SUGGESTS INTENSIFICATION INTO A CYCLONIC STORM.

(M.MOHAPATRA)

TOO:1800 HRS IST





भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

SPECIAL TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI 11-05-2013

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 24 HOURS ISSUED AT 21 UTC OF 10 MAY, 2013 BASED ON 1800 UTC OF 10 MAY, 2013.

THE DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL REMAINED PRACTICALLY STATIONARY AND LAY CENTRED AT 1800 UTC 10TH MAY 2013 NEAR LATITUDE 05.5⁰N AND LONGITUDE 92.0⁰E, ABOUT 400 KM SOUTH-SOUTHWEST OF CAR NICOBAR (43367), 1200 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1550 KM SOUTHEAST OF CHENNAI (43279) AND 1850 KM SOUTH OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY INTO A CYCLONIC STORM DURING NEXT 12 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 48 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.0. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTHEAST BAY OF BENGAL, ADJOINING INDIAN OCEAN, NORTH SUMATRA, NICOBAR ISLANDS AND SOUTH ANDAMAN SEA. THE ASSOCIATED CONVECTION HAS INCREASED GRADUALLY WITH RESPECT TO HEIGHT AND ORGANISATION DURING PAST 12 HRS. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 30 KNOTS GUSTING TO 40 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS VERY ROUGH TO HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
10-05-2013/1800	05.5/92.0	55-65 gusting to 75	Deep Depression
11-05-2013/0000	06.0/91.5	60-70 gusting to 80	Cyclonic Storm
11-05-2013/0600	06.5/91.0	70-80 gusting to 90	Cyclonic Storm
11-05-2013/1200	07.1/90.5	80-90 gusting to 100	Cyclonic Storm
11-05-2013/1800	07.7/90.0	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/0600	09.0/89.2	100-110 gusting to 120	Severe Cyclonic Storm
12-05-2013/1800	10.5/88.6	110-120 gusting to 130	Severe Cyclonic Storm
13-05-2013/0600	12.0/88.0	120-130 gusting to 145	Very severe Cyclonic Storm
13-05-2013/1800	14.0/89.0	120-130 gusting to 145	Very severe Cyclonic Storm

REMARKS:

SCATTEROMETRY DATA INDICATES THE CYCLONIC CIRCULATION OVER THE REGION AND ASSOCIATED WIND SPEED TO BE ABOUT 25-30 KNOTS WIND SPEED IS RELATIVELY HIGHER IN SOUTHERN SECTOR IN ASSOCIATION WITH CROSS EQUATORIAL FLOW.

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER GULF OF THAILAND.HENCE DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER IN PAST 24 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE. THE SEA HEIGHT ANOMALY IS ABOUT 15M.

HOWEVER, THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 20-30 KNOTS (HIGH). THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 48 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE GFS SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF & UKMO DO NOT SUGGEST SUCH SEVERITY IN INTENSITY. IMD'S DYNAMICAL STATISTICAL MODEL SUGGESTS INTENSIFICATION INTO A CYCLONIC STORM.

(NARESH KUMAR)
METEOROLOGIST

TOO:110230 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY NO. ONE ISSUED AT 0600 UTC OF 11TH MAY 2013 BASED ON 0300 UTC CHARTS OF 11TH MAY 2013.

THE DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS, INTENSIFIED INTO A CYCLONIC STORM, **VIYARU** AND LAY CENTRED AT 0300 UTC OF 11TH MAY 2013 NEAR LATITUDE 07.0° N AND LONGITUDE 90.5° E, ABOUT 350 KM SOUTHWEST OF CAR NICOBAR (43367), 1030 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1300 KM SOUTHEAST OF CHENNAI (43279) AND 1700 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN 4.0°N AND 11.5°N EAST OF LONG AND 84.5°E EXTREME NORTH SUMATRA, NICOBAR ISLANDS AND SOUTHWEST ANDAMAN SEA. THE ASSOCIATED CONVECTION HAS INCREASED GRADUALLY WITH RESPECT TO HEIGHT AND ORGANISATION DURING PAST 12 HRS. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 35 KNOTS GUSTING TO 45 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
11-05-2013/0300	07.0/90.5	60-70gusting to 80	Cyclonic Storm
11-05-2013/0600	07.3/90.2	65-75 gusting to 85	Cyclonic Storm
11-05-2013/1200	07.8/89.7	70-80 gusting to 90	Cyclonic Storm
11-05-2013/1800	08.3/89.2	80-90 gusting to 100	Cyclonic Storm
12-05-2013/0000	09.0/88.7	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/1200	10.5/87.5	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/0000	12.0/86.7	110-120 gusting to 130	Severe Cyclonic Storm
13-05-2013/1200	13.5/87.5	120-130 gusting to 145	Very severe Cyclonic Storm
14-05-2013/0000	15.5/88.3	120-130 gusting to 145	Very severe Cyclonic Storm
15-05-2013/0000	18.5/89.5	120-130 gusting to 145	Very severe Cyclonic Storm
16-05-2013/0000	21.5/92.5	120-130 gusting to 145	Very severe Cyclonic Storm

REMARKS:

SCATTEROMETRY DATA (OSCAT, 1829 UTC OF 10TH MAY 2013) INDICATES WIND SPEED TO BE ABOUT 40 KNOTS WIND SPEED IS RELATIVELY HIGHER IN SOUTHERN SECTOR IN ASSOCIATION WITH CROSS EQUATORIAL FLOW. A SHIP LOCATED NEAR 5.3⁰N AND 89.5⁰E REPORTED MSLP OF 1006.3 WITH 24 KM CHANGE OF + 2.4 HPA AND SURFACE WIND OF 270/34 KTS AT 0300 UTC OF 11TH.

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. HENCE DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER IN PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 20-30 KNOTS (HIGH) IN THE NORTHWEST SECTOR. IT HAS DECREASED AROUND THE SYSTEM CENTRE AND IS ABOUT 10-20 KTS (MODERATE). THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT AND DOES NOT SHOW LANDFALL. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM.. IMD'S DYNAMICAL STATISTICAL MODEL SUGGESTS INTENSIFICATION. CLIMATOLOGICALLY, THE SYSTEM IS LIKELY TO INTENSIFY FURTHER.

(M. MOHAPATRA
SCIENTIST-E

TOO:111130 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY NO. TWO ISSUED AT 0900 UTC OF 11TH MAY 2013 BASED ON 0600 UTC CHARTS OF 11TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS AT A SPEED OF 15 KMPH AND LAY CENTRED AT 0600 UTC OF 11TH MAY 2013 NEAR LATITUDE 07.5⁰ N AND LONGITUDE 90.0⁰ E, ABOUT 350 KM SOUTHWEST OF CAR NICOBAR(43367), 970 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1230 KM SOUTHEAST OF CHENNAI (43279) AND 1650 KM SOUTH-SOUTHWEST OF CHITTAGONG(41977). THE SYSTEM WOULD INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. IT IS A CURVED BAND PATTERN. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN 3.0⁰N AND 12.5⁰N LONG 82.0⁰E AND 96.0⁰E EXTREME NORTH SUMATRA, NICOBAR ISLANDS AND SOUTHWEST ANDAMAN SEA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 997 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
11-05-2013/0600	07.5/90.0	65-75 gusting to 85	Cyclonic Storm
11-05-2013/1200	08.0/89.5	70-80 gusting to 90	Cyclonic Storm
11-05-2013/1800	08.5/89.0	80-90 gusting to 100	Cyclonic Storm
12-05-2013/0000	09.0/88.5	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/0600	09.7/88.0	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/1800	11.3/87.2	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/0600	12.8/86.5	110-120 gusting to 130	Severe Cyclonic Storm
13-05-2013/1800	14.5/87.2	120-130 gusting to 145	Very severe Cyclonic Storm
14-05-2013/0600	16.5/88.0	120-130 gusting to 145	Very severe Cyclonic Storm
15-05-2013/0600	19.0/89.5	120-130 gusting to 145	Very severe Cyclonic Storm
16-05-2013/0600	21.5/92.0	120-130 gusting to 145	Very severe Cyclonic Storm

REMARKS:

A SHIP LOCATED NEAR 5.5⁰N AND 92.5⁰E REPORTED MSLP OF 1007.1 AND SURFACE WIND OF 240/27 KTS AT 0600 UTC OF 11TH. ANOTHER SHIP LOCATED NEAR 11.2⁰N AND 90.6⁰E REPORTED MSLP OF 1005.1 AND SURFACE WIND OF 090/14 KTS.

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. HENCE DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER IN PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 20-30 KNOTS (HIGH) IN THE NORTHWEST SECTOR. IT HAS DECREASED AROUND THE SYSTEM CENTRE AND IS ABOUT 10-20 KTS (MODERATE). THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT AND DOES NOT SHOW LANDFALL. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM. CLIMATOLOGICALLY, THE SYSTEM IS LIKELY TO INTENSIFY FURTHER.

(M. MOHAPATRA)
SCIENTIST-E

TOO:111400 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI**

TROPICAL STORM 'VIYARU' ADVISORY NO. THREE ISSUED AT 1200 UTC OF 11TH MAY 2013 BASED ON 0900 UTC CHARTS OF 11TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS AT A SPEED OF 15 KMPH AND LAY CENTRED AT 0900 UTC OF 11TH MAY 2013 NEAR LATITUDE 08.0° N AND LONGITUDE 89.5° E, ABOUT 400 KM SOUTHWEST OF CAR NICOBAR (43367), 900 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1150 KM SOUTHEAST OF CHENNAI (43279) AND 1600 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. IT IS A CURVED BAND PATTERN. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN 3.0°N AND 12.5°N LONG 82.0°E AND 96.0°E EXTREME NORTH SUMATRA, NICOBAR ISLANDS AND SOUTHWEST ANDAMAN SEA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
11-05-2013/0900	08.0/89.5	65-75 gusting to 85	Cyclonic Storm
11-05-2013/1200	08.3/89.2	70-80 gusting to 90	Cyclonic Storm
11-05-2013/1800	08.8/88.7	80-90 gusting to 100	Cyclonic Storm
12-05-2013/0000	09.3/88.2	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/0600	09.9/87.5	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/1800	11.3/86.9	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/0600	12.6/86.5	110-120 gusting to 130	Severe Cyclonic Storm
13-05-2013/1800	14.5/87.2	120-130 gusting to 145	Very severe Cyclonic Storm
14-05-2013/0600	16.5/88.0	120-130 gusting to 145	Very severe Cyclonic Storm
15-05-2013/0600	19.0/89.5	120-130 gusting to 145	Very severe Cyclonic Storm
16-05-2013/0600	21.5/92.0	120-130 gusting to 145	Very severe Cyclonic Storm

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. HENCE DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER IN PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 20-30 KNOTS (HIGH) IN THE NORTHWEST SECTOR. IT HAS DECREASED AROUND THE SYSTEM CENTRE AND IS ABOUT 10-20 KTS (MODERATE). THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT AND DOES NOT SHOW LANDFALL. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM. CLIMATOLOGICALLY, THE SYSTEM IS LIKELY TO INTENSIFY FURTHER.

(M. MOHAPATRA)
SCIENTIST-E

TOO:111730 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI**

TROPICAL STORM 'VIYARU' ADVISORY NO. FOUR ISSUED AT 1500 UTC OF 11TH MAY 2013 BASED ON 1200 UTC CHARTS OF 11TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED SLIGHTLY NORTHWESTWARDS AND LAY CENTRED AT 1200 TC OF 11TH MAY 2013 NEAR LATITUDE 08.0⁰ N AND LONGITUDE 89.5⁰ E, ABOUT 400 KM SOUTHWEST OF CAR NICOBAR (43367), 900 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1150 KM SOUTHEAST OF CHENNAI (43279) AND 1600 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. IT IS A CURVED BAND PATTERN. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN 3.0⁰N AND 12.5⁰N LONG 82.0⁰E AND 96.0⁰E EXTREME NORTH SUMATRA, NICOBAR ISLANDS AND SOUTHWEST ANDAMAN SEA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
11-05-2013/1200	08.0/89.5	65-75 gusting to 85	Cyclonic Storm
11-05-2013/1800	08.8/88.7	70-80gusting to 90	Cyclonic Storm
12-05-2013/0000	09.6/88.1	80-90 gusting to 100	Cyclonic Storm
12-05-2013/0600	10.3/87.4	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/1200	11.0/86.7	90-100 gusting to 110	Severe Cyclonic Storm
13-05-2013/0000	12.5/86.0	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/1200	13.5/86.2	100-110 gusting to 120	Severe Cyclonic Storm
14-05-2013/0000	15.0/86.7	110-120 gusting to 130	Severe Cyclonic Storm
14-05-2013/1200	16.5/87.5	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/0000	18.5/89.0	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/1200	20.5/90.5	110-120 gusting to 130	Severe Cyclonic Storm
16-05-2013/0000	22.0/92.0	110-120 gusting to 130	Severe Cyclonic Storm
16-05-2013/1200	24.0/94.0	55-65 gusting to 75	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. HENCE DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED FURTHER IN PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10-20 KNOTS (HIGH) IN THE NORTHWEST SECTOR. IT HAS DECREASED AROUND THE SYSTEM CENTRE AND IS ABOUT 10-20 KTS (MODERATE). THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT AND DOES NOT SHOW LANDFALL. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM. CLIMATOLOGICALLY, THE SYSTEM IS LIKELY TO INTENSIFY FURTHER.

(T.N. JHA)
SCIENTIST-E

TOO:112030 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI**

TROPICAL STORM 'VIYARU' ADVISORY NO. FIVE ISSUED AT 1800 UTC OF 11TH MAY 2013 BASED ON 1500 UTC CHARTS OF 11TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS AND LAY CENTRED AT 1500 TC OF 11TH MAY 2013 NEAR LATITUDE 08.5⁰ N AND LONGITUDE 89.0⁰ E, ABOUT 420 KM SOUTHWEST OF CAR NICOBAR (43367), 880 KM EAST-SOUTHEAST OF TRINCOMALEE (43418), 1080 KM SOUTHEAST OF CHENNAI (43279) AND 1560 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. IT IS A CURVED BAND PATTERN. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN 4.5⁰N AND 13.0⁰N EAST OF LONG 82.0⁰E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
11-05-2013/1500	08.5/89.0	65-75 gusting to 85	Cyclonic Storm
11-05-2013/1800	09.0/88.2	70-80gusting to 90	Cyclonic Storm
12-05-2013/0000	09.6/88.1	80-90 gusting to 100	Cyclonic Storm
12-05-2013/0600	10.3/87.4	90-100 gusting to 110	Severe Cyclonic Storm
12-05-2013/1200	11.0/86.7	90-100 gusting to 110	Severe Cyclonic Storm
13-05-2013/0000	12.5/86.0	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/1200	13.5/86.2	100-110 gusting to 120	Severe Cyclonic Storm
14-05-2013/0000	15.0/86.7	110-120 gusting to 130	Severe Cyclonic Storm
14-05-2013/1200	16.5/87.5	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/0000	18.5/89.0	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/1200	20.5/90.5	110-120 gusting to 130	Severe Cyclonic Storm
16-05-2013/0000	22.0/92.0	110-120 gusting to 130	Severe Cyclonic Storm
16-05-2013/1200	24.0/94.0	55-65 gusting to 75	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY REMAINED UNCHANGED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS ABOUT 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10-20 KNOTS (MODERATE) IN THE NORTHWEST SECTOR. THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT AND DOES NOT SHOW LANDFALL. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM. CLIMATOLOGICALLY, THE SYSTEM IS LIKELY TO INTENSIFY FURTHER.

(T.N. JHA)
SCIENTIST-E

TOO:112330 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI**

TROPICAL STORM 'VIYARU' ADVISORY NO. SIX ISSUED AT 2100 UTC OF 11TH MAY 2013
BASED ON 1800 UTC CHARTS OF 11TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS AND LAY CENTRED AT 1500 TC OF 11TH MAY 2013 NEAR LATITUDE 09.0⁰ N AND LONGITUDE 88.5⁰ E, ABOUT 470 KM WEST OF CAR NICOBAR (43367), 800 KM EAST- OF TRINCOMALEE (43418), 1010 KM SOUTHEAST OF CHENNAI (43279) AND 1520 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. IT IS A CURVED BAND PATTERN. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN 4.5⁰N AND 13.0⁰N EAST OF LONG 82.0⁰E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
11-05-2013/1800	09.0/88.5	70-80gusting to 90	Cyclonic Storm
12-05-2013/0000	09.5/87.0	80-90 gusting to 100	Cyclonic Storm
12-05-2013/0600	10.0/86.5	80-90 gusting to 100	Cyclonic Storm
12-05-2013/1200	10.5/86.0	80-90 gusting to 110	Cyclonic Storm
12-05-2013/1800	11.5/85.8	90-100 gusting to 110	Severe Cyclonic Storm
13-05-2013/0600	12.5/85.6	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/1800	14.5/85.8	100-110 gusting to 120	Severe Cyclonic Storm
14-05-2013/0600	15.0/86.0	110-120 gusting to 130	Severe Cyclonic Storm
14-05-2013/1800	17.0/86.8	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/0600	18.5/87.8	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/1800	21.5/90.5	110-120 gusting to 130	Severe Cyclonic Storm
16-05-2013/0600	22.5/91.5	110-120 gusting to 130	Severe Cyclonic Storm

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY REMAINED UNCHANGED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10-20 KNOTS (MODERATE) IN THE NORTHWEST SECTOR. THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT AND DOES NOT SHOW LANDFALL. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM. CLIMATOLOGICALLY, THE SYSTEM IS LIKELY TO INTENSIFY FURTHER.

(T.N. JHA)
SCIENTIST-E

TOO:120230 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY NO. SEVEN ISSUED AT 0000 UTC OF 12TH MAY 2013 BASED ON 2100 UTC CHARTS OF 11TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS AND LAY CENTRED AT 2100 UTC OF 11TH MAY 2013 NEAR LATITUDE 09.5° N AND LONGITUDE 88.0° E, ABOUT 530 KM WEST OF CAR NICOBAR (43367), 750 KM EAST- OF TRINCOMALEE (43418), 940 KM SOUTHEAST OF CHENNAI (43279) AND 1480 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). THE SYSTEM WOULD INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. IT IS CENTRAL DENSE OVERCAST CLOUD PATTERN. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN 5.0°N TO 12.5°N AND LONG 82.0°E TO 90.0°E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
11-05-2013/2100	09.5/88.0	70-80 gusting to 90	Cyclonic Storm
12-05-2013/0000	09.8/87.5	70-80 gusting to 90	Cyclonic Storm
12-05-2013/0600	10.4/87.0	80-90 gusting to 100	Cyclonic Storm
12-05-2013/1200	10.8/86.5	80-90 gusting to 100	Cyclonic Storm
12-05-2013/1800	11.5/85.8	80-90 gusting to 100	Cyclonic Storm
13-05-2013/0600	12.5/85.6	100-110 gusting to 120	Severe Cyclonic Storm
13-05-2013/1800	14.5/85.8	100-110 gusting to 120	Severe Cyclonic Storm
14-05-2013/0600	15.0/86.0	110-120 gusting to 130	Severe Cyclonic Storm
14-05-2013/1800	17.0/86.8	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/0600	18.5/87.8	110-120 gusting to 130	Severe Cyclonic Storm
15-05-2013/1800	21.5/90.5	110-120 gusting to 130	Severe Cyclonic Storm
16-05-2013/0600	22.5/91.5	110-120 gusting to 130	Severe Cyclonic Storm

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY REMAINED UNCHANGED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10-20 KNOTS (MODERATE) IN THE NORTHWEST SECTOR. THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT AND DOES NOT SHOW LANDFALL. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM. CLIMATOLOGICALLY, THE SYSTEM IS LIKELY TO INTENSIFY FURTHER.

(T.N. JHA)
SCIENTIST-E

TOO:120530 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.8
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 0300 UTC OF 12TH MAY 2013 BASED ON 0000 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWESTWARDS AND LAY CENTRED AT 0000 UTC OF 12TH MAY 2013 NEAR LATITUDE 10.0 N AND LONGITUDE 87.5° E, ABOUT 600 KM WEST-SOUTHWEST OF CAR NICOBAR (43367), 700 KM NORTHEAST OF TRINCOMALEE (43418), 850 KM SOUTHEAST OF CHENNAI (43279) AND 1450 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE CLOUD SYSTEM DISORGANISED AND THE SYSTEM IS WEAKENING.. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN BET LAT 4.5°N TO 13.5°N LONG 81.0°E TO 90.0°E AND ADJ SRILANKA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/0000	10.0/87.5	65-75 gusting to 85	Cyclonic Storm
12-05-2013/0600	10.5/87.0	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1200	11.0/86.5	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1800	11.6/86.0	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	12.3/85.8	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	13.4/85.6	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	15.2/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	16.0/86.4	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	18.0/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	19.0/88.4	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	20.8/89.8	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	22.0/91.0	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0000	22.5/92.5	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 12⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR INTENSIFICATION. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY HAS INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND HAS DECREASED AND IS ABOUT 05-10 KNOTS (MODERATE) IN THE NORTHWEST SECTOR. THE MJO NOW LIES OVER PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION. DYNAMICAL PARAMETERS SHOW THE INTENFICATION OF THE SYSTEM AND SATELLITE CLOUD IMAGERY SHOWS WEAKENING OF THE SYSTEM. HENCE, THE SYSEM IS UNDER CLOSE WATCH.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, ECMWF MODEL SHOWS SLOW MOVEMENT. THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. WHILE SOME MODELS LIKE JMA SUGGEST INTENSIFICATION OF THE SYSTEM TO SEVERE CYCLONIC STORM, THE MODELS LIKE ECMWF UKMO & NOW GFS DO NOT SUGGEST SUCH SEVERITY IN INTENSITY RATHER THEY SUGGEST GRADUAL WEAKENING DURING RECURVATURE OF THE SYSTEM.

(T.N. JHA)
SCIENTIST-E

TOO:120830 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.9

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 0600 UTC OF 12TH MAY 2013 BASED ON 0300 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED SLIGHTLY NORTHWESTWARDS AND LAY CENTRED AT 0830 HRS IST OF 12TH MAY 2013 NEAR LATITUDE 10.0°N AND LONGITUDE 87.5°E, ABOUT 600 KM WEST-SOUTHWEST OF CAR NICOBAR (43367), 700 KM NORTHEAST OF TRINCOMALEE (43418), 850 KM SOUTHEAST OF CHENNAI (43279) AND 1450 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. LATEST SATELLITE IMAGERY SHOWS DISORGANISATION OF CLOUD MASS AND WEAKENING OF THE SYSTEM.

ACCORDING TO SATELLITE IMAGERIES, THE CLOUD SYSTEM IS DISORGANISED HOWEVER DEEP CONVECTION PERSISTS (T-2.0, C.I. 2.5). INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN BET LAT 4.5°N TO 13.5°N LONG 81.0°E TO 90.0°E AND ADJ SRILANKA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/0300	10.0/87.5	65-75 gusting to 85	Cyclonic Storm
12-05-2013/0600	10.5/87.0	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1200	11.0/86.5	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1800	11.6/86.0	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	12.3/85.8	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	13.4/85.6	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	15.2/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	16.0/86.4	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	18.0/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	19.0/88.4	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	20.8/89.8	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	22.0/91.0	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0000	22.5/92.5	50-60 gusting to 70	Deep Depression

REMARKS:

LATEST OCEAN SAT-2 WINDS SUGGEST WIND SPEED OF 30-35 KTS AROUND THE SYSTEM CENTRE. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15°N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. HOWEVER THE WIND SHEAR IS MODERATE TO HIGH AROUND THE SYSTEM CENTRE. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 48 HRS AND THEN INTENSIFICATION FURTHER FOR SUBSEQUENT 24 HRS.

(KAMALJIT RAY)
SCIENTIST-E

TOO:121100 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.10
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0900 UTC OF 12TH MAY 2013 BASED ON 0600 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED SLIGHTLY WESTWARDS AT A SPEED OF 15KMPH AND LAY CENTRED AT 0600 UTC OF 12TH MAY 2013 NEAR LATITUDE 10.0° N AND LONGITUDE 87.0° E, ABOUT 650 KM WEST-NORTHWEST OF CAR NICOBAR (43367), 650 KM EAST-NORTHEAST OF TRINCOMALEE (43418), 800 KM SOUTHEAST OF CHENNAI (43279) AND 1440 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 36 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE CLOUD SYSTEM IS DISORGANISED HOWEVER DEEP CONVECTION PERSISTS (T-2.0, C.I. 2.5). INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL, ADJOINING INDIAN OCEAN BETWEEN BET LAT 4.5°N TO 13.5°N LONG 81.0°E TO 90.0°E AND ADJ SRILANKA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/0600	10.0/87.0	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1200	10.8/86.2	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1800	11.5/85.6	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	11.8/85.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	12.4/85.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.5/85.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.7/86.2	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	16.0/86.9	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.5/87.7	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	19.2/88.6	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	20.7/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1800	22.2/91.5	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0600	23.7/93.0	50-60 gusting to 70	Deep Depression

REMARKS:

LATEST OCEAN SAT-2 WINDS SUGGEST WIND SPEED OF 30-35 KTS AROUND THE SYSTEM CENTRE. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15°N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. HOWEVER THE WIND SHEAR IS MODERATE TO HIGH AROUND THE SYSTEM CENTRE. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 36 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 48 HRS AND THEN INTENSIFICATION FURTHER FOR SUBSEQUENT 24 HRS.

(KAMALJIT RAY)
SCIENTIST-E

TOO:121330 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.11

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 1200 UTC OF 12TH MAY 2013 BASED ON 0900 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTH WESTWARDS AT A SPEED OF 12 KMPH DURING PAST 6 HRS. IT LAY CENTRED AT 0900 UTC OF 12TH MAY 2013 NEAR LATITUDE 10.5⁰ N AND LONGITUDE 87.0⁰ E, ABOUT 650 KM WEST-NORTHWEST OF CAR NICOBAR (43367), 650 KM EAST-NORTHEAST OF TRINCOMALEE (43418), 800 KM SOUTHEAST OF CHENNAI (43279) AND 1400 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 12 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE CLOUD SYSTEM HAS STARTED REORGANISING DURING PAST THREE HRS WITH CONSOLIDATION OF DEEP CONVECTION. SATELLITE ESTIMATED INTENSITY IS T-2.0 AND C.I. 2.5. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL. BETWEEN LAT 5.0⁰N TO 14.0⁰N LONG 81.0⁰E TO 89.0⁰E AND ADJOINING SRILANKA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/0900	10.5/87.0	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1200	10.7/86.5	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1800	11.2/86.3	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	11.6/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	12.0/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.0/86.2	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.4/86.7	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.7/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.0/88.3	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	18.7/89.7	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	20.5/91.2	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1800	22.3/92.7	55-65 gusting to 75	Deep Depression
17-05-2013/0600	24.0/94.2	40-50 gusting to 60	Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. HOWEVER THE WIND SHEAR IS MODERATE TO HIGH AROUND THE SYSTEM CENTRE. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 12-24 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 36 HRS AND THEN INTENSIFICATION FURTHER DURING SUBSEQUENT 24 HRS.

(M. MOHAPATRA)
SCIENTIST-E

TOO:121700 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.12

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 1500 UTC OF 12TH MAY 2013 BASED ON 1200 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL REMAINED PRACTICALLY STATIONARY DURING PAST 3 HRS. IT LAY CENTRED AT 1200 UTC OF 12TH MAY 2013 NEAR LATITUDE 10.5⁰ N AND LONGITUDE 87.0⁰ E, ABOUT 650 KM WEST-NORTHWEST OF CAR NICOBAR (43367), 650 KM EAST-NORTHEAST OF TRINCOMALEE (43418), 800 KM SOUTHEAST OF CHENNAI (43279) AND 1400 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 24 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, THE CLOUD SYSTEM HAS STARTED REORGANISING DURING PAST SIX HRS WITH CONSOLIDATION OF DEEP CONVECTION. SATELLITE ESTIMATED INTENSITY IS T-2.0 AND C.I. 2.5. INTENSE TO VERY INTENSE CONVECTION SEEN OVER SOUTH BAY OF BENGAL. BETWEEN LAT 6.0⁰N TO 15.0⁰N LONG 80.0⁰E TO 89.0⁰E AND ADJOINING SRILANKA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/1200	10.5/87.0	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1800	10.8/86.5	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	11.2/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	11.5/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.0/86.4	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	13.5/87.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.1/87.6	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.8/88.4	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.4/89.4	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/90.6	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.0/92.0	50-60 gusting to 70	Deep Depression
17-05-2013/0000	23.2/93.8	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. HOWEVER THE WIND SHEAR IS MODERATE TO HIGH AROUND THE SYSTEM CENTRE. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 12-24 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 36 HRS AND THEN INTENSIFICATION FURTHER DURING SUBSEQUENT 24 HRS.

(KAMALJIT RAY)
SCIENTIST-E

TOO:122000 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.13
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 1800 UTC OF 12TH MAY 2013 BASED ON 1500 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED SLIGHTLY WESTWARDS AND LAY CENTRED AT 1500 UTC OF 12TH MAY 2013 NEAR LATITUDE 10.5° N AND LONGITUDE 86.5° E, ABOUT 700 KM NORTHWEST OF CAR NICOBAR (43367), 610 KM NORTHEAST OF TRINCOMALEE (43418), 750 KM SOUTHEAST OF CHENNAI (43279) AND 1420 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWESTWARDS DURING NEXT 24 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. ASSOCIATED INTENSE TO VERY INTENCE CONVECTION OVER SOUTH BAY ADJOINING INDIAN OCEAN BETWEEN LAT 6.0°N TO 15.0°N LONG 80.0°E TO 89.0°E ADJOINING SRILANKA PALK STRAIT. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/1500	10.5/86.5	65-75 gusting to 85	Cyclonic Storm
12-05-2013/1800	10.8/86.3	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	11.2/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	11.5/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.0/86.4	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	13.5/87.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.1/87.6	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.8/88.4	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.4/89.4	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/90.6	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.0/92.0	50-60 gusting to 70	Deep Depression
17-05-2013/0000	23.2/93.8	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 12-24 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 36 HRS AND THEN INTENSIFICATION FURTHER DURING SUBSEQUENT 24 HRS.

(T.N.JHA)
SCIENTIST-E

TOO:122300 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.14

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 2100 UTC OF 12TH MAY 2013 BASED ON 1800 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWARDS AND LAY CENTRED AT 1800 UTC OF 12TH MAY 2013 NEAR LATITUDE 11.0° N AND LONGITUDE 86.5° E, ABOUT 700 KM NORTHWEST OF CAR NICOBAR (43367), 630 KM NORTHEAST OF TRINCOMALEE (43418), 720 KM SOUTHEAST OF CHENNAI (43279) AND 1380 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWARDS DURING NEXT 18 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTH BAY ADJOINING INDIAN OCEAN BETWEEN LAT 7.0°N TO 14.0°N LONG 81.0°E TO 88.0°E ADJOINING SRILANKA PALK STRAIT. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/1800	11.0/86.5	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	11.2/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	11.8/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.6/86.3	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.8/86.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.5/87.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	16.4/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.4/87.8	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	19.4/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	20.5/91.0	60-70 gusting to 80	Cyclonic Storm
16-05-2013/1800	21.8/92.6	50-60 gusting to 70	Deep Depression
17-05-2013/0600	22.5/94.0	40-50 gusting to 60	Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT DURING NEXT 12-24 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 36 HRS AND THEN INTENSIFICATION FURTHER DURING SUBSEQUENT 24 HRS.

(T.N.JHA)
SCIENTIST-E

TOO:130230 HRS IST



FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.15
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0000 UTC OF 13TH MAY 2013 BASED ON 2100 UTC CHARTS OF 12TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL REMAINED PRACTICALLY STATIONARY AND LAY CENTRED AT 2100 UTC OF 12TH MAY 2013 NEAR LATITUDE 11.0° N AND LONGITUDE 86.5° E, ABOUT 700 KM NORTHWEST OF CAR NICOBAR (43367), 630 KM NORTHEAST OF TRINCOMALEE (43418), 720 KM SOUTHEAST OF CHENNAI (43279) AND 1380 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWARDS DURING NEXT 18 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. ASSOCIATED INTENSE TO VERY INTENCE CONVECTION OVER SOUTH BAY ADJOINING INDIAN OCEAN BETWEEN LAT 7.0°N TO 14.0°N LONG 81.0°E TO 88.0°E ADJOINING SRILANKA PALK STRAIT. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
12-05-2013/2100	11.0/86.5	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0000	11.2/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	11.8/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.6/86.3	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.8/86.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.5/87.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.8/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.4/88.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	19.4/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	20.5/91.0	60-70 gusting to 80	Cyclonic Storm
16-05-2013/1800	21.8/92.6	50-60 gusting to 70	Deep Depression
17-05-2013/0600	22.5/94.0	40-50 gusting to 60	Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 36 HRS AND THEN INTENSIFICATION FURTHER DURING SUBSEQUENT 24 HRS.

(T.N.JHA)
SCIENTIST-E

TOO:130500 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.16

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0300 UTC OF 13TH MAY 2013 BASED ON 0000 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWARDS AND LAY CENTRED AT 0000 UTC OF 13TH MAY 2013 NEAR LATITUDE 11.5° N AND LONGITUDE 86.5° E, ABOUT 750 KM NORTHWEST OF CAR NICOBAR (43367), 650 KM NORTHEAST OF TRINCOMALEE (43418), 700 KM SOUTHEAST OF CHENNAI (43279) AND 1330 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWARDS DURING NEXT 12 HOURS AND RECURVE THEREAFTER NORTHEASTWARDS TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. ASSOCIATED INTENSE TO VERY INTENCE CONVECTION OVER SOUTH BAY ADJOINING INDIAN OCEAN BETWEEN LAT 7.0°N TO 14.0°N WEST OF LONG 88.0°E ADJOINING SRILANKA PALK STRAIT. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/0000	11.5/86.5	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	11.8 /86.3	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.7/86.3	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.5/86.7	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	14.5/86.8	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	16.0/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	17.4/88.2	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.5/89.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	20.0/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	20.4/91.5	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.5/93.0	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND CONTINUES TO BE ABOUT 05-10 KNOTS (LOW TO MODERATE) IN THE NORTHEAST SECTOR. THE MJO NOW LIES IN THE BORDER OF PHASE 3 WITH AMPLITUDE GREATER THAN 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. DYNAMICAL PARAMETERS SHOW THE INTENSIFICATION OF THE SYSTEM AFTER RECURVATURE.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWESTWARD MOVEMENT AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING

OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 36 HRS AND THEN INTENSIFICATION FURTHER DURING SUBSEQUENT 24 HRS.

(T.N.JHA)
SCIENTIST-E

TOO:130830 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY NO.17
RSMC – TROPICAL CYCLONES, NEW DELHI**

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 0600 UTC OF 13TH MAY 2013 BASED ON 0300 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED SLIGHTLY NORTH-WESTWARDS WITH A SPEED OF 10 KMPH DURING PAST 3 HRS AND LAY CENTRED AT 0300 UTC OF 13TH MAY 2013 NEAR LATITUDE 11.8° N AND LONGITUDE 86.4° E, ABOUT 760 KM NORTHWEST OF CAR NICOBAR (43367), 670 KM NORTHEAST OF TRINCOMALEE (43418), 690 KM SOUTHEAST OF CHENNAI (43279) AND 1300 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTH-NORTHWESTWARDS DURING NEXT 12 HOURS AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTH BAY ADJOINING INDIAN OCEAN BETWEEN LAT 5.5 °N TO 15.0°N WEST OF LONG 87.0°E ADJOINING SRILANKA PALK STRAIT. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -70°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/0300	11.8/86.4	65-75 gusting to 85	Cyclonic Storm
13-05-2013/0600	12.0/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.7/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.5/86.7	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	14.5/86.8	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	16.0/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	17.4/88.2	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.5/89.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	20.0/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	20.4/91.5	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.5/93.0	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15⁰N AND IS PROVIDING POLEWARD OUT FLOW IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION OVER SOUTH ANDAMAN SEA. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND HAS INCREASED TO 10-20 KTS (MODERATE) IN THE NORTHEAST SECTOR. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTH-NORTHWESTWARD MOVEMENT AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST SLIGHT WEAKENING DURING NEXT 12 HRS AND THEN INTENSIFICATION FURTHER DURING SUBSEQUENT 24 HRS.

(KAMALJIT RAY)
SCIENTIST-E

TOO:131150 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.18

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 0900 UTC OF 13TH MAY 2013 BASED ON 0600 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 6 HRS AND LAY CENTRED AT 0600 UTC OF 13TH MAY 2013 NEAR LATITUDE 12.0° N AND LONGITUDE 86.5° E, ABOUT 750 KM NORTHWEST OF CAR NICOBAR (43367), 700 KM NORTHEAST OF TRINCOMALEE (43418), 700 KM EAST-SOUTHEAST OF CHENNAI (43279) AND 1280 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTH-NORTHWESTWARDS DURING NEXT 06 HOURS AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTH BAY BETWEEN LAT 9.0° N TO 15.0° N WEST OF LONG 87.0° E ADJOINING SRILANKA PALK STRAIT. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/0600	12.0/86.5	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.7/86.2	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.4/86.7	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	14.2/87.3	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	15.0/88.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	16.6/89.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	18.1/90.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	19.6/91.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	21.1/92.0	60-70 gusting to 80	Cyclonic Storm
16-05-2013/1800	22.6/93.5	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 14°N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT MAY LEAD TO SLOWER MOVEMENT AND DECREASE IN VERTICAL WIND SHEAR AROUND THE

SYSTEM CENTRE. CURRENTLY, THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10-20 KTS (MODERATE) IN THE NORTHEAST SECTOR. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTH-NORTHWESTWARD MOVEMENT DURING 12-24 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 48 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(M. MOHAPATRA)
SCIENTIST-E

TOO:131400 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.19

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 1200 UTC OF 13TH MAY 2013 BASED ON 0900 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED WESTWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 3 HRS AND LAY CENTRED AT 0900 UTC OF 13TH MAY 2013 NEAR LATITUDE 12.0⁰ N AND LONGITUDE 86.0⁰ E, ABOUT 800 KM NORTHWEST OF CAR NICOBAR (43367), 640 KM NORTHEAST OF TRINCOMALEE (43418), 640 KM EAST-SOUTHEAST OF CHENNAI (43279) AND 1280 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWARDS DURING NEXT 06 HOURS AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTHWEST BAY BETWEEN LAT 9.0⁰ N TO 16.0⁰ N WEST OF LONG 87.5⁰ E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -94⁰ C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/0900	12.0/86.0	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1200	12.5/86.0	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	13.4/86.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	14.2/87.3	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	15.0/88.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	16.6/89.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	18.1/90.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	19.6/91.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	21.1/92.0	60-70 gusting to 80	Cyclonic Storm
16-05-2013/1800	22.6/93.5	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 14⁰ N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT MAY LEAD TO SLOWER MOVEMENT AND DECREASE IN VERTICAL WIND SHEAR AROUND THE

SYSTEM CENTRE. CURRENTLY, THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10-20 KTS (MODERATE) IN THE NORTHEAST SECTOR. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30-32⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST INITIAL NORTH-NORTHWESTWARD MOVEMENT DURING 12-24 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF AND HWRF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. UKMO MAINTAINS INTENSITY TILL LANDFALL. WHILE JMA AND GFS INDICATE WEAKENING OF THE SYSTEM. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 48 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(KAMALJIT RAY)
SCIENTIST-E

TOO:131630 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.20

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 1500 UTC OF 13TH MAY 2013 BASED ON 1200 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED WESTWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 6 HRS AND LAY CENTRED AT 1200 UTC OF 13TH MAY 2013 NEAR LATITUDE 12.0⁰ N AND LONGITUDE 86.0⁰ E, ABOUT 800 KM NORTHWEST OF CAR NICOBAR (43367), 650 KM NORTHEAST OF TRINCOMALEE (43418), 650 KM EAST-SOUTHEAST OF CHENNAI (43279) AND 1280 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE INITIALLY NORTHWARDS DURING NEXT 12 HOURS AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTHWEST BAY BETWEEN LAT 8.5⁰ N TO 17.0⁰ N WEST OF LONG 87.⁰ E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -91⁰ C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/1200	12.0/86.0	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	12.5/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	13.4/86.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.2/87.3	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/89.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.1/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/91.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.1/92.0	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.6/93.5	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 14⁰N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT HAS LED TO SLOWER MOVEMENT AND DECREASE IN VERTICAL WIND SHEAR AROUND THE SYSTEM CENTRE. CURRENTLY, THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 05-10 KTS (LOW) IN THE NORTHEAST SECTOR. AND 10-20 KTS IN OTHER SECTORS UPPER LEVEL DIVERGENCE HAS DECREASED IN PAST SIX HOURS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWARD MOVEMENT DURING NEXT 12 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF MODEL MAINTAIN INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 48 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(M. MOHAPATRA)
SCIENTIST-E

TOO:132000 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.21

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 1800 UTC OF 13TH MAY 2013 BASED ON 1500 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF ABOUT 10 KMPH DURING PAST 3 HRS AND LAY CENTRED AT 1500 UTC OF 13TH MAY 2013 NEAR LATITUDE 12.5⁰ N AND LONGITUDE 86.0⁰ E, ABOUT 815 KM NORTHWEST OF CAR NICOBAR (43367), 650 KM NORTHEAST OF TRINCOMALEE (43418), 640 KM EAST-SOUTHEAST OF CHENNAI (43279) AND 1300 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHWARDS DURING NEXT FEW HOURS AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTHWEST BAY BETWEEN LAT 9.0⁰N TO 17.0⁰N WEST OF LONG 88.⁰E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -95⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/1500	12.5/86.0	65-75 gusting to 85	Cyclonic Storm
13-05-2013/1800	12.8/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	13.4/86.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.2/87.3	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/89.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.1/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/91.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.1/92.0	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.6/93.5	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15° N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT HAS LED TO SLOWER MOVEMENT AND DECREASE IN VERTICAL WIND SHEAR AROUND THE SYSTEM CENTRE. CURRENTLY, THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 05-10 KTS (LOW) IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS DECREASED IN PAST SIX HOURS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. MOST OF THE NWP MODELS SUGGEST INITIAL NORTHWARD MOVEMENT DURING NEXT 12 HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF MODEL MAINTAINS INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 48 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(NARESH KUMAR)
METEOROLOGIST

TOO:131030 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.22
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 2100 UTC OF 13TH MAY 2013 BASED ON 1800 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED WESTWARDS WITH A SPEED OF ABOUT 15 KMPH DURING PAST 3 HRS AND LAY CENTRED AT 1800 UTC OF 13TH MAY 2013 NEAR LATITUDE 12.5⁰ N AND LONGITUDE 85.5⁰ E, ABOUT 880 KM NORTHWEST OF CAR NICOBAR (43367), 630 KM NORTHEAST OF TRINCOMALEE (43418), 580 KM EAST-SOUTHEAST OF CHENNAI (43279) AND 1280 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHWARDS DURING NEXT FEW HOURS AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTHWEST BAY BETWEEN LAT 9.0⁰N TO 17.0⁰N WEST OF LONG 88.0⁰E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -95⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/1800	12.5/85.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	13.4/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.2/86.8	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/87.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.8/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/88.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.1/89.5	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/90.5	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.1/91.5	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.6/93.0	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15° N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT HAS LED TO DECREASE IN VERTICAL WIND SHEAR AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 05-10 KTS (LOW) IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM. MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF MODEL MAINTAINS INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 48 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(NARESH KUMAR)
METEOROLOGIST

TOO:140230 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.23
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 2300 UTC OF 13TH MAY 2013 BASED ON 2100 UTC CHARTS OF 13TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF ABOUT 15 KMPH DURING PAST 3 HRS AND LAY CENTRED AT 2100 UTC OF 13TH MAY 2013 NEAR LATITUDE 13.0⁰ N AND LONGITUDE 85.5⁰ E, ABOUT 900 KM NORTHWEST OF CAR NICOBAR (43367), 670 KM NORTHEAST OF TRINCOMALEE (43418), 570 KM EAST OF CHENNAI (43279) AND 1240 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHWARDS FOR SOME MORE TIME AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION OVER SOUTHWEST BAY BETWEEN LAT 9.0⁰ N TO 17.0⁰ N WEST OF LONG 87.0⁰ E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -90⁰ C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
13-05-2013/2100	13.0/85.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0000	13.4/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.2/86.8	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/87.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.8/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/88.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.1/89.5	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/90.5	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.1/91.5	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.6/93.0	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 15° N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT HAS LED TO DECREASE IN VERTICAL WIND SHEAR AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF MODEL MAINTAINS INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 48 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(NARESH KUMAR)
METEOROLOGIST

TOO:140430 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.24
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0200 UTC OF 14TH MAY 2013 BASED ON 0000 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER SOUTHEAST BAY OF BENGAL MOVED FURTHER NORTHWARDS WITH A SPEED OF ABOUT 15 KMPH DURING PAST 6 HRS AND LAY CENTRED AT 0000 UTC OF 14TH MAY 2013 NEAR LATITUDE 13.5⁰ N AND LONGITUDE 85.5⁰ E, ABOUT 950 KM NORTHWEST OF CAR NICOBAR (43367), 700 KM NORTHEAST OF TRINCOMALEE (43418), 600 KM EAST OF CHENNAI (43279) AND 1200 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHWARDS FOR SOME MORE TIME AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER SOUTHWEST BAY BETWEEN LAT 9.0⁰N TO 17.0⁰N WEST OF LONG 87.0⁰E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -93⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/0000	13.5/85.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.2/86.3	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/87.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.8/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.1/89.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.1/91.0	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.6/92.5	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16° N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT HAS LED TO DECREASE IN VERTICAL WIND SHEAR AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. ECMWF MODEL MAINTAINS INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 36 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(NARESH KUMAR)
METEOROLOGIST

TOO:140730 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.25

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0600 UTC OF 14TH MAY 2013 BASED ON 0300 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER SOUTHEAST BAY OF BENGAL WAS PRACTICALLY STATIONARY DURING PAST 3 HRS AND LAY CENTRED AT 0300 UTC OF 14TH MAY 2013 NEAR LATITUDE 13.5⁰ N AND LONGITUDE 85.5⁰ E, ABOUT 950 KM NORTHWEST OF CAR NICOBAR (43367), 700 KM NORTHEAST OF TRINCOMALEE (43418), 600 KM EAST OF CHENNAI (43279) AND 1200 KM SOUTH-SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHWARDS FOR SOME MORE TIME AND THEREAFTER RECURVE TOWARDS BANGLADESH-MYANMAR COAST.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER SOUTHWEST BAY BETWEEN LAT 10.0⁰ N TO 17.0⁰ N WEST OF LONG 86.5⁰ E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -89⁰ C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/0300	13.5/85.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/0600	14.2/86.3	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/87.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.8/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.1/89.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.6/90.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	21.1/91.0	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0000	22.6/92.5	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. IT HAS LED TO DECREASE IN VERTICAL WIND SHEAR AROUND THE SYSTEM CENTRE. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10 KTS IN THE NORTHEAST

SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE IS FAVOURABLE FOR MAINTAINING THE INTENSITY. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY TILL LANDFALL. ECMWF MODEL MAINTAINS INTENSITY TILL RECURVATURE AND WEAKENING THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY DURING NEXT 36 HRS AND THEN INTENSIFICATION UPTO 55 KTS DURING SUBSEQUENT 24 HRS.

(KAMALJIT RAY)
SCIENTIST-E

TOO:141030 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.26

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0900 UTC OF 14TH MAY 2013 BASED ON 0600 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER WESTCENTRAL BAY OF BENGAL HAS MOVED NORTHWARDS DURING PAST 6 HRS AT A SPEED OF ABOUT 10 KMPH AND LAY CENTRED AT 0600 UTC OF 14TH MAY 2013 NEAR LATITUDE 14.0° N AND LONGITUDE 85.5° E, ABOUT 350 KM NORTHWEST OF PORTBLAIR (4333), 480 KM SOUTHEAST OF VISHAKHAPATNAM (43150), 700 KM SOUTH-SOUTHWEST OF PARADIP (42976), AND 1140 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG DURING EVENING/NIGHT OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. THE SYSTEM HAS THE SHEAR PATTERN FOR PAST THREE HOURS. THE CONVECTIVE CLOUD IS SHEARED TO THE WEST OF LOW LEVEL CIRCULATION CENTRE BY ABOUT 0.9° ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 10.5 °N TO 17.5°N WEST OF LONG 86.0°E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -81°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/0600	14.0/85.5	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.8/86.7	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/87.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.6/88.2	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	19.0/89.6	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	20.5/91.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1800	22.0/92.5	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0600	23.0/94.0	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 5-10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS DECREASED DURING PAST 6 HRS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY AS A DEPRESSION TILL LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. UKMO AND JMA SUGGEST GRADUAL INCREASE IN INTENSITY TILL LANDFALL.

(KAMALJIT RAY)
SCIENTIST-E

TOO:141400 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.27

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0900 UTC OF 14TH MAY 2013 BASED ON 0600 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHEASTWARDS DURING PAST 6 HRS AT A SPEED OF ABOUT 20 KMPH AND LAY CENTRED AT 0900 UTC OF 14TH MAY 2013 NEAR LATITUDE 14.5⁰ N AND LONGITUDE 86.0⁰ E, ABOUT 800 KM NORTHWEST OF PORTBLAIR (4333), 460 KM SOUTHEAST OF VISHAKHAPATNAM (43150), 650 KM SOUTH-SOUTHWEST OF PARADIP (42976), AND 1060 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG DURING EVENING/NIGHT OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. THE SYSTEM HAS THE SHEAR PATTERN FOR PAST SIX HOURS. THE CONVECTIVE CLOUD IS SHEARED TO THE WEST OF LOW LEVEL CIRCULATION CENTRE BY ABOUT 0.6⁰. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 10.5⁰N TO 17.5⁰N WEST OF LONG 86.0⁰E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/0900	14.5/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1200	15.0/86.3	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.8/86.8	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.6/87.3	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.6/87.8	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	19.0/89.3	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	20.5/91.0	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1800	22.0/92.5	60-70 gusting to 80	Cyclonic Storm
17-05-2013/0600	23.0/94.0	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 16⁰ N AND IS PROVIDING POLEWARD OUT FLOW. THE ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 5-10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS DECREASED DURING PAST 6 HRS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY AS A DEPRESSION TILL LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. UKMO AND JMA SUGGEST GRADUAL INCREASE IN INTENSITY TILL LANDFALL.

(M.MOHAPATRA)
SCIENTIST-E

TOO:141715 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.28

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 1400 UTC OF 14TH MAY 2013 BASED ON 1200 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHEASTWARDS DURING PAST 6 HRS AT A SPEED OF ABOUT 13 KMPH AND LAY CENTRED AT 1200 UTC OF 14TH MAY 2013 NEAR LATITUDE 14.5⁰ N AND LONGITUDE 86.0⁰ E, ABOUT 800 KM NORTHWEST OF PORTBLAIR (4333), 460 KM SOUTHEAST OF VISHAKHAPATNAM (43150), 650 KM SOUTH-SOUTHWEST OF PARADIP (42976), AND 1060 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG AROUND 1800 UTC OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I-2.5. THE SHEAR PATTERN OF THE SYSTEM CONTINUES. THE CONVECTIVE CLOUD IS SHEARED TO THE WEST OF LOW LEVEL CIRCULATION CENTRE BY ABOUT 0.6⁰. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 11.5⁰N TO 18.0⁰N WEST OF LONG 86.0⁰E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT - 85⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/1200	14.5/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.2/86.4	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.0/87.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.0/87.6	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.0/88.3	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	19.2/89.7	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	20.8/91.2	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0000	22.3/92.7	60-70 gusting to 80	Cyclonic Storm
17-05-2013/1200	24.0/94.7	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17⁰ N AND IS PROVIDING POLEWARD OUT FLOW. AN ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 5-10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS DECREASED INCREASED DURING PAST 3 HRS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTHWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY AS A DEPRESSION TILL LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. UKMO AND JMA SUGGEST GRADUAL INCREASE IN INTENSITY TILL LANDFALL.

(M.MOHAPATRA)
SCIENTIST-E

TOO:141930 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.29
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 1700 UTC OF 14TH MAY 2013 BASED ON 1500 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHEASTWARDS DURING PAST 9 HRS AT A SPEED OF ABOUT 10 KMPH AND LAY CENTRED AT 100 UTC OF 14TH MAY 2013 NEAR LATITUDE 14.5⁰ N AND LONGITUDE 86.0⁰ E, ABOUT 800 KM NORTHWEST OF PORTBLAIR (4333), 460 KM SOUTHEAST OF VISHAKHAPATNAM (43150), 650 KM SOUTH-SOUTHWEST OF PARADIP (42976), AND 1060 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG AROUND 1800 UTC OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-2.5. THE SHEAR PATTERN OF THE SYSTEM CONTINUES AND SHOWS SIGN OF CDO PATTERNS. THE CONVECTIVE CLOUD IS SHEARED TO THE WEST OF LOW LEVEL CIRCULATION CENTRE BY ABOUT 0.6⁰ ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 11.5⁰ N TO 18.0⁰ N WEST OF LONG 87.0⁰ E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85⁰ C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/1500	14.5/86.0	65-75 gusting to 85	Cyclonic Storm
14-05-2013/1800	15.0/86.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	16.0/87.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.0/87.6	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	18.0/88.3	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	19.2/89.7	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	20.8/91.2	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0000	22.3/92.7	60-70 gusting to 80	Cyclonic Storm
17-05-2013/1200	24.0/94.7	50-60 gusting to 70	Deep Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17⁰ N AND IS PROVIDING POLEWARD OUT FLOW. AN ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 5-10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS INCREASED DURING PAST 3 HRS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO SIGNIFICANT CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY AS A DEPRESSION TILL LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. UKMO AND JMA SUGGEST GRADUAL INCREASE IN INTENSITY TILL LANDFALL.

(CHARAN SINGH)
SCIENTIST-E

TOO:142300 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.30

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 2100 UTC OF 14TH MAY 2013 BASED ON 1800 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHEASTWARDS DURING PAST 6 HRS AT A SPEED OF ABOUT 12 KMPH AND LAY CENTRED AT 1800 UTC OF 14TH MAY 2013 NEAR LATITUDE 15.0° N AND LONGITUDE 86.5° E, ABOUT 770 KM NORTHWEST OF PORTBLAIR (4333), 470 KM SOUTHEAST OF VISHAKHAPATNAM (43150), 600 KM SOUTH OF PARADIP (42976), AND 1000 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG AROUND 1800 UTC OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I-2.5. THE SHEAR PATTERN OF THE SYSTEM CONTINUES. THE CONVECTIVE CLOUD IS SHEARED TO THE WEST OF LOW LEVEL CIRCULATION CENTRE BY ABOUT 0.6° ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 11.5°N TO 18.0°N WEST OF LONG 87.5°E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT - 85°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/1800	15.0/86.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	15.5/86.7	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	16.5/87.3	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	17.5/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	18.7/88.8	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	19.7/89.7	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1800	21.0/91.2	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0600	22.3/92.7	50-60 gusting to 70	Deep Depression
17-05-2013/1800	24.0/94.7	40-50 gusting to 60	Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17⁰ N AND IS PROVIDING POLEWARD OUT FLOW. AN ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 5-10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS INCREASED DURING PAST 3 HRS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO SIGNIFICANT CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY AS A DEPRESSION TILL LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. UKMO AND JMA SUGGEST GRADUAL INCREASE IN INTENSITY TILL LANDFALL.

(CHARAN SINGH)
SCIENTIST-E

TOO:150230 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.31

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0000 UTC OF 15th MAY 2013 BASED ON 2100 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER WESTCENTRAL BAY OF BENGAL REMAINED PRACTICALLY STATIONARY DURING PAST 3 HOURS AND LAY CENTRED AT 2100 UTC OF 14TH MAY 2013 NEAR LATITUDE 15.0° N AND LONGITUDE 86.5° E, ABOUT 770 KM NORTHWEST OF PORTBLAIR (4333), 470 KM SOUTHEAST OF VISHAKHAPATNAM (43150), 600 KM SOUTH OF PARADIP (42976) AND 1000 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG AROUND 1800 UTC OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. REPEAT T2.5. THE SHEAR PATTERN OF THE SYSTEM CONTINUES. THE CONVECTIVE CLOUD IS SHEARED TO THE WEST OF LOW LEVEL CIRCULATION CENTRE BY ABOUT 0.6° ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 12.0°N TO 18.0°N WEST OF LONG 88.0°E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
14-05-2013/2100	15.0/86.5	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0000	15.5/86.7	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	16.5/87.3	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	17.5/88.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	18.7/88.8	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0600	19.7/89.7	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1800	21.0/91.2	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0600	22.3/92.7	50-60 gusting to 70	Deep Depression
17-05-2013/1800	24.0/94.7	40-50 gusting to 60	Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 17⁰ N AND IS PROVIDING POLEWARD OUT FLOW. AN ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 5-10 KTS IN THE NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS INCREASED DURING PAST 3 HRS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO SIGNIFICANT CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 30⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHWARD MOVEMENT DURING NEXT FEW HRS AND THEN RECURVING NORTHEASTWARDS TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY AS A DEPRESSION TILL LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. UKMO AND JMA SUGGEST GRADUAL INCREASE IN INTENSITY TILL LANDFALL.

(CHARAN SINGH)
SCIENTIST-E

TOO:150530 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.32

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0300 UTC OF 15th MAY 2013 BASED ON 0000 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHEASTWARDS DURING PAST 12 HOURS AND LAY CENTRED AT 0000 UTC OF 15TH MAY 2013 NEAR LATITUDE 16.0° N AND LONGITUDE 87.0° E, ABOUT 800 KM NORTHWEST OF PORTBLAIR (4333), 450 KM SOUTHEAST OF VISHAKHAPATNAM (43150), 480 KM SOUTH OF PARADIP (42976) AND 870 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG AROUND 1800 UTC OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. REPEAT T2.5. THE SHEAR PATTERN OF THE SYSTEM CONTINUES. THE CONVECTIVE CLOUD IS SHEARED TO THE WEST OF LOW LEVEL CIRCULATION CENTRE BY ABOUT 0.6° ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 12.0°N TO 18.0°N WEST OF LONG 88.0°E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -85°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/0000	16.0/87.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	16.6/87.4	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1200	17.2/87.8	65-75 gusting to 85	Cyclonic Storm
15-05-2013/1800	18.0/88.5	65-75 gusting to 85	Cyclonic Storm
16-05-2013/0000	19.2/89.4	65-75 gusting to 85	Cyclonic Storm
16-05-2013/1200	20.8/90.8	65-75 gusting to 85	Cyclonic Storm
17-05-2013/0000	22.2/92.2	50-60 gusting to 70	Deep Depression
17-05-2013/1200	23.5/94.3	40-50 gusting to 60	Depression

REMARKS:

THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 18.0° N AND IS PROVIDING POLEWARD OUT FLOW. AN ANTICYCLONIC CIRCULATION LIES OVER EAST CENTRAL BAY OF BENGAL. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS ABOUT 10-15 KTS THE OVER THE SYSTEM AND NORTHEAST SECTOR AND 10-20 KTS IN OTHER SECTORS. UPPER LEVEL DIVERGENCE HAS DECREASE DURING PAST 6 HRS. THE LOW LEVEL CONVERGENCE ALONG WITH LOW LEVEL RELATIVE VORTICITY SHOWS NO SIGNIFICANT CHANGE DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28- 30°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 4 WITH AMPLITUDE EQUAL TO 2. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS CONTINUES TO MAINTAIN INITIAL INTENSITY AS A DEPRESSION TILL LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. UKMO AND JMA SUGGEST GRADUAL INCREASE IN INTENSITY TILL LANDFALL.

(CHARAN SINGH)
SCIENTIST-E

TOO:150830 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.33

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM 'VIYARU' ADVISORY ISSUED AT 0600 UTC OF 15TH MAY 2013 BASED ON 0300 UTC CHARTS OF 14TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL BAY OF BENGAL MOVED FURTHER NORTH-NORTHEASTWARDS DURING PAST 12 HOURS AT A SPEED OF ABOUT 16 KMPH AND LAY CENTRED AT 0300 UTC OF 15TH MAY 2013 NEAR LATITUDE 16.5⁰ N AND LONGITUDE 87.0⁰ E, ABOUT 850 KM NORTHWEST OF PORTBLAIR (4333), 430 KM EAST-SOUTHEAST OF VISHAKHAPATNAM (43150), 430 KM SOUTH-SOUTHEAST OF PARADIP (42976) AND 820 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD INTENSIFY FURTHER AND MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF (41998), CLOSE TO CHITTAGONG DURING NIGHT OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. REPEAT T2.5. THE SYSTEM HAS SPIRAL BAND PATTERN. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 14.5⁰N TO 20.0⁰N WEST OF LONG 89.0⁰E ADJOINING NORTH COASTAL ANDHRAPRADESH AND ODISHA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -90⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 993 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/0300	16.5/87.0	65-75 gusting to 85	Cyclonic Storm
15-05-2013/0600	17.0/87.4	70-80 gusting to 90	Cyclonic Storm
15-05-2013/1200	17.5/88.0	70-80 gusting to 90	Cyclonic Storm
15-05-2013/1800	18.0/88.5	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0000	19.2/89.4	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1200	20.8/90.8	80-90 gusting to 100	Cyclonic Storm
17-05-2013/0000	22.2/92.2	55-65 gusting to 75	Deep Depression
17-05-2013/1200	23.5/94.3	40-50 gusting to 60	Depression

REMARKS:

WESTERLY TROUGH AT 500 HPA RUNS ALONG 77°N INFLUENCING THE NORTH-NORTHEASTERLY MOVEMENT OF THE SYSTEM. THE SYSTEM LIES JUST TO THE NORTH OF RIDGE IN UPPER TROPOSPHERIC LEVEL. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND HAS DECREASED TO 5-10 KTS OVER THE SYSTEM. UPPER LEVEL DIVERGENCE HAS INCREASED IN THE PAST 12 HRS. LOW LEVEL CONVERGENCE AND VORTICITY IS HIGH OVER THE SYSTEM. A BUOY LOCATED AT 16.5° N 88.0° E REPORTED WIND OF 160/25 KTS. LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 12-18 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT 24 HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT 24HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(M.MOHAPATRA)
SCIENTIST-E

TOO:151150 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.34

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0800 UTC OF 15TH MAY 2013 BASED ON 0600 UTC CHARTS OF 15TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL BAY OF BENGAL MOVED FURTHER NORTH-NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 16 KMPH AND LAY CENTRED AT 0600 UTC OF 15TH MAY 2013 NEAR LATITUDE 17.0⁰ N AND LONGITUDE 87.5⁰ E, ABOUT 850 KM NORTHWEST OF PORTBLAIR (4333), 600 KM SOUTH-SOUTHWEST OF KOLKATA (42807), 380 KM SOUTHEAST OF PARADIP (42976) AND 750 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD INTENSIFY FURTHER AND MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF(41998), CLOSE TO CHITTAGONG DURING NIGHT OF 16TH MAY 2013. MAXIMUM SUSTAINED WIND SPEED AT THE TIME OF LANDFALL WOULD BE 80-90 KMPH GUSTING TO 100 KMPH.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-3.0. REPEAT T3.0. THE SYSTEM HAS SPIRAL BAND PATTERN. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 15.0⁰N TO 20.5⁰N WEST OF LONG 90.0⁰E ADJOINING NORTH COASTAL ANDHRAPRADESH AND SOUTH COASTAL ODISHA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -89⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/0600	17.0/87.5	75-85 gusting to 95	Cyclonic Storm
15-05-2013/1200	17.7/88.0	75-85 gusting to 95	Cyclonic Storm
15-05-2013/1800	18.5/88.5	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0000	19.2/89.2	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0600	20.0/90.0	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1800	21.5/91.5	80-90 gusting to 100	Cyclonic Storm
17-05-2013/0600	22.9/93.0	55-65 gusting to 75	Deep Depression
17-05-2013/1800	24.0/95.0	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1M ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF BANGLADESH NEAR THE POINT OF LANDFALL.

REMARKS:

WESTERLY TROUGH AT 500 HPA RUNS ALONG 77°N INFLUENCING THE NORTH-NORTHEASTERLY MOVEMENT OF THE SYSTEM. THE SYSTEM LIES JUST TO THE NORTH OF RIDGE IN UPPER TROPOSPHERIC LEVEL. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND HAS DECREASED TO 5-10 KTS OVER THE SYSTEM. UPPER LEVEL DIVERGENCE HAS INCREASED IN THE PAST 12 HRS. LOW LEVEL CONVERGENCE AND VORTICITY IS HIGH OVER THE SYSTEM. A BUOY LOCATED AT 16.5° N/88.0° E REPORTED WIND OF 220/20 KTS. ANOTHER BUOY LOCATED NEAR 17.9°N/89.7°E REPORTED WIND 160/25 KTS LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 18 UTC OF 16TH TO 00 UTC OF 17TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT 24 HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT 24HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(KAMALJIT RAY)
SCIENTIST-E

TOO:151400 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.35

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 1200 UTC OF 15th MAY 2013 BASED ON 0900 UTC CHARTS OF 15TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL BAY OF BENGAL MOVED FURTHER NORTH-NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 20 KMPH AND LAY CENTRED AT 0900 UTC OF 15TH MAY 2013 NEAR LATITUDE 17.5⁰ N AND LONGITUDE 87.5⁰ E, ABOUT 900 KM NORTHWEST OF PORTBLAIR (4333), 560 KM SOUTH-SOUTHWEST OF KOLKATA (42807), 330 KM SOUTH-SOUTHEAST OF PARADIP (42976) AND 700 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD INTENSIFY FURTHER AND MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA (41984) AND TEKNAFF(41998), CLOSE TO CHITTAGONG DURING NIGHT OF 16TH MAY 2013. MAXIMUM SUSTAINED WIND SPEED AT THE TIME OF LANDFALL WOULD BE 80-90 KMPH GUSTING TO 100 KMPH.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-3.0. REPEAT T3.0. THE SYSTEM HAS SPIRAL BAND PATTERN. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 15.0⁰N TO 21.0⁰N WEST OF LONG 90.0⁰E ADJOINING NORTH COASTAL ANDHRAPRADESH AND SOUTH COASTAL ODISHA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -88⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/0900	17.5/87.5	75-85 gusting to 95	Cyclonic Storm
15-05-2013/1200	18.0/88.0	75-85 gusting to 95	Cyclonic Storm
15-05-2013/1800	18.8/88.5	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0000	19.4/89.2	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0600	20.2/90.0	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1800	21.5/91.5	80-90 gusting to 100	Cyclonic Storm
17-05-2013/0600	22.9/93.0	55-65 gusting to 75	Deep Depression
17-05-2013/1800	24.0/95.0	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-1.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

REMARKS:

WESTERLY TROUGH AT 500 HPA RUNS ALONG 77°N INFLUENCING THE NORTH-NORTHEASTERLY MOVEMENT OF THE SYSTEM. THE SYSTEM LIES JUST TO THE NORTH OF RIDGE IN UPPER TROPOSPHERIC LEVEL. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND HAS DECREASED TO 5-10 KTS OVER THE SYSTEM. UPPER LEVEL DIVERGENCE HAS INCREASED IN THE PAST 12 HRS. LOW LEVEL CONVERGENCE AND VORTICITY IS HIGH OVER THE SYSTEM. A BUOY LOCATED AT 16.5° N/88.0° E REPORTED WIND OF 260/23 KTS. ANOTHER BUOY LOCATED NEAR 17.9°N/89.7°E REPORTED WIND 160/31 KTS LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM TOWARDS BANGLADESH ADJOINING MYANMAR COAST AND LANDFALL OVER BANGLADESH COAST BETWEEN KHEPUPARA AND TEKNAFF, CLOSE TO CHITTAGONG BETWEEN 18 UTC OF 16TH TO 00 UTC OF 17TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 24 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT 24 HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT 24HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(M.MOHAPATRA)
SCIENTIST-E

TOO:151700 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.36
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 1400 UTC OF 15TH MAY 2013 BASED ON 1200 UTC CHARTS OF 15TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL BAY OF BENGAL MOVED FURTHER NORTH-NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 20 KMPH AND LAY CENTRED AT 1200 UTC OF 15TH MAY 2013 NEAR LATITUDE 18.0⁰ N AND LONGITUDE 88.0⁰ E, ABOUT 900 KM NORTHWEST OF PORTBLAIR (4333), 500 KM SOUTH-SOUTHWEST OF KOLKATA (42807), 360 KM SOUTH-SOUTHEAST OF PARADIP (42976) AND 630 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD INTENSIFY FURTHER AND MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST NEAR CHITTAGONG AROUND 1800 UTC OF 16TH MAY 2013. MAXIMUM SUSTAINED WIND SPEED AT THE TIME OF LANDFALL WOULD BE 80-90 KMPH GUSTING TO 100 KMPH.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-3.0. REPEAT T3.0. THE SYSTEM HAS SPIRAL BAND PATTERN. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER WEST CENTRAL BAY BETWEEN LAT 15.0⁰ N TO 21.0⁰ N WEST OF LONG 90.0⁰ E ADJOINING NORTH COASTAL ANDHRAPRADESH AND SOUTH COASTAL ODISHA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -88⁰ C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/1200	18.0/88.0	75-85 gusting to 95	Cyclonic Storm
15-05-2013/1800	18.8/88.7	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0000	19.7/89.5	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0600	20.6/90.3	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1200	21.5/91.2	80-90 gusting to 100	Cyclonic Storm
17-05-2013/0000	23.3/93.0	55-65 gusting to 75	Deep Depression
17-05-2013/1200	25.1/95.5	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-1.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

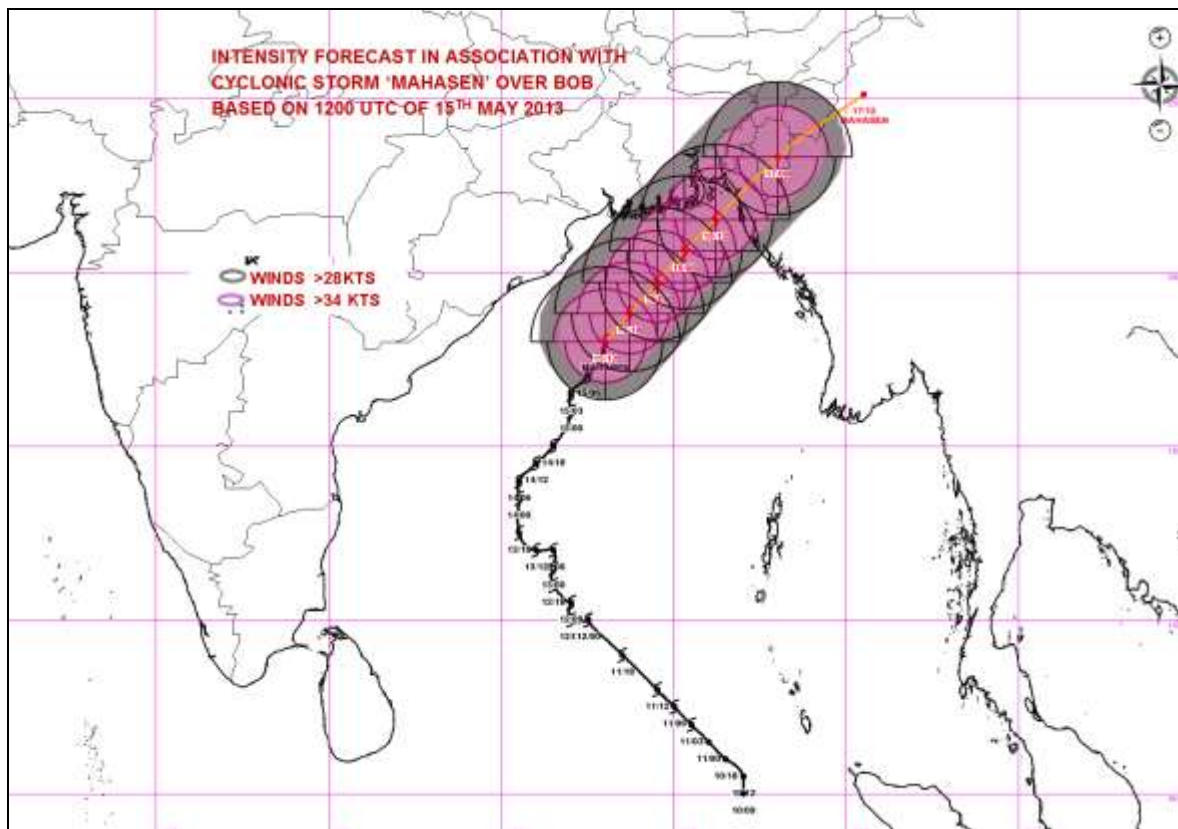
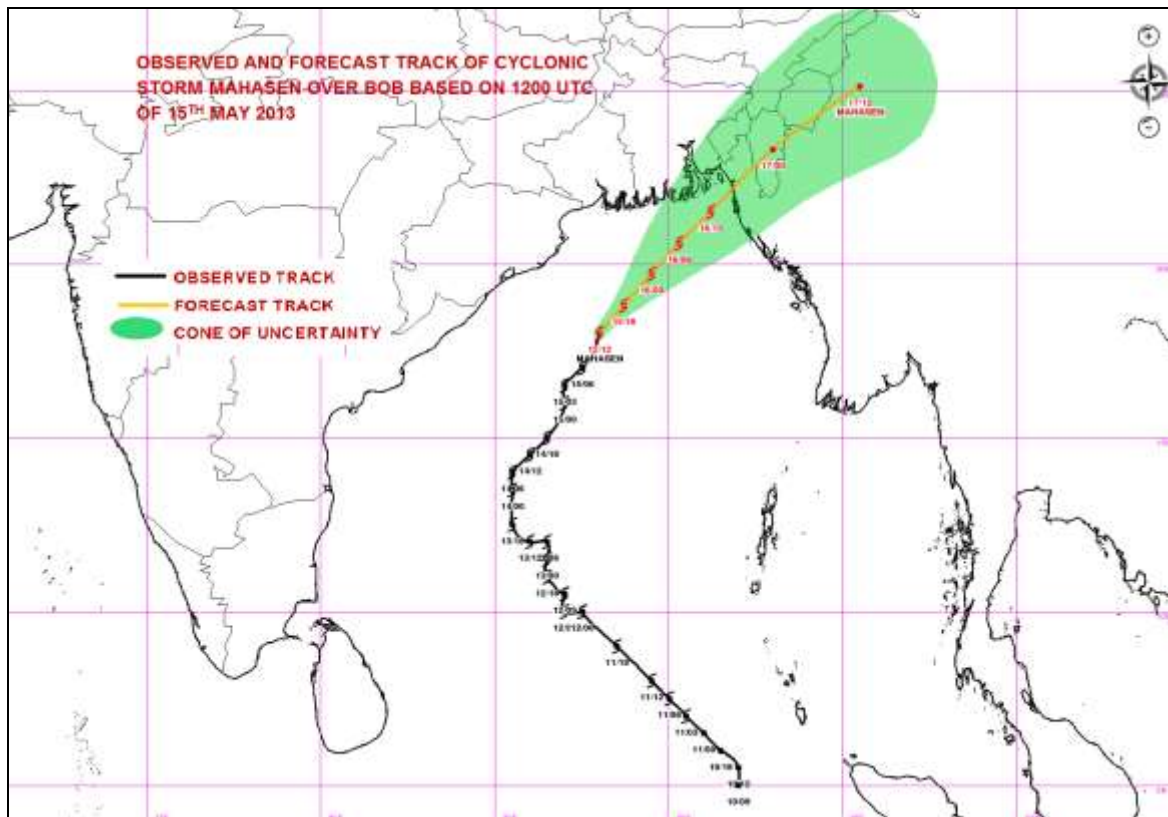
REMARKS:

WESTERLY TROUGH AT 500 HPA NOW RUNS ALONG 81°N ,LEADING TO FASTER MOVEMENT OF THE SYSTEM. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND CONTINUES TO BE 5-10 KTS OVER THE SYSTEM. LOW LEVEL CONVERGENCE HAS DECREASED IN THE SOUTHWEST SECTOR OF THE SYSTEM AND IS HIGH IN THE NE SECTOR. THE SHEAR TENDENCY INDICATES INCREASE IN SHEAR BY 5 TO 10 KNOTS OVER THE PAST SIX HOURS.LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM AND LANDFALL OVER BANGLADESH COAST, CLOSE TO CHITTAGONG BETWEEN 18 UTC OF 16TH TO 00 UTC OF 17TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 12 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT 12 HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT 12HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(M.MOHAPATRA)
SCIENTIST-E

TOO:151930 HRS IST





भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.37
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 1700 UTC OF 15TH MAY 2013 BASED ON 1500 UTC CHARTS OF 15TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 25 KMPH AND LAY CENTRED AT 1500 UTC OF 15TH MAY 2013 NEAR LATITUDE 18.5⁰ N AND LONGITUDE 88.5⁰ E OVER WESTCENTRAL & ADJOINING EAST CENTRAL BAY OF BENGAL, ABOUT 880 KM NORTHWEST OF PORTBLAIR (4333), 440 KM SOUTH-SOUTHWEST OF KOLKATA (42807), 270 KM SOUTH-SOUTHEAST OF PARADIP (42976) AND 550 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD INTENSIFY FURTHER AND MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST NEAR CHITTAGONG AROUND 1800 UTC OF 16TH MAY 2013. MAXIMUM SUSTAINED WIND SPEED AT THE TIME OF LANDFALL WOULD BE 80-90 KMPH GUSTING TO 100 KMPH.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-3.0. REPEAT T3.0. THE SYSTEM HAS SPIRAL BAND PATTERN. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER NORTH AND ADJOINING BAY OF BENGAL NORTH OF LAT 16.5⁰N AND WEST OF LONG 92.5⁰E ADJOINING COASTAL ORISSA AND SOUTH GANGETIC WEST BENGAL. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -91⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/1500	18.5/88.5	75-85 gusting to 95	Cyclonic Storm
15-05-2013/1800	19.0/89.0	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0000	19.7/89.5	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0600	20.6/90.3	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1200	21.5/91.2	80-90 gusting to 100	Cyclonic Storm
17-05-2013/0000	23.3/93.0	55-65 gusting to 75	Deep Depression
17-05-2013/1200	25.1/95.5	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-1.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

REMARKS:

WESTERLY TROUGH AT 500 HPA NOW RUNS ALONG 81°N ,LEADING TO FASTER MOVEMENT OF THE SYSTEM. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND CONTINUES TO BE 5-10 KTS OVER THE SYSTEM. LOW LEVEL CONVERGENCE HAS DECREASED IN THE SOUTHWEST SECTOR OF THE SYSTEM AND IS HIGH IN THE NE SECTOR. THE SHEAR TENDENCY INDICATES INCREASE IN SHEAR BY 5 TO 10 KNOTS OVER THE PAST SIX HOURS.LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM AND LANDFALL OVER BANGLADESH COAST, CLOSE TO CHITTAGONG BETWEEN 18 UTC OF 16TH TO 00 UTC OF 17TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 12 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT 12 HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT 12HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(NARESH KUMAR)
METEOROLOGIST

TOO:152230 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.38
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 2100 UTC OF 15th MAY 2013 BASED ON 1800 UTC CHARTS OF 15TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL & ADJOINING EAST CENTRAL BAY OF BENGAL MOVED NORTH-NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 20 KMPH AND LAY CENTRED AT 1800 UTC OF 15TH MAY 2013 NEAR LATITUDE 19.0° N AND LONGITUDE 88.5° E, ABOUT 930 KM NORTH-NORTHWEST OF PORTBLAIR (4333), 390 KM SOUTH OF KOLKATA (42807), 240 KM SOUTH-SOUTHEAST OF PARADIP (42976) AND 510 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD INTENSIFY FURTHER AND MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST NEAR CHITTAGONG AROUND 1800 UTC OF TODAY, THE 16TH MAY 2013. MAXIMUM SUSTAINED WIND SPEED AT THE TIME OF LANDFALL WOULD BE 80-90 KMPH GUSTING TO 100 KMPH.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-3.0 REPEAT T3.0. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER NORTH BAY OF BENGAL NORTH OF LAT 18.0° N AND NORTH COASTAL ORISSA, GANGETIC WEST BENGAL, SOUTH BANGLADESH AND SOUTH TRIPURA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -92°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/1800	19.0/88.5	75-85 gusting to 95	Cyclonic Storm
16-05-2013/0000	19.7/89.5	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0600	20.6/90.3	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1200	21.5/91.2	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1800	22.4/92.1	80-90 gusting to 100	Cyclonic Storm
17-05-2013/0000	23.3/93.0	55-65 gusting to 75	Deep Depression
17-05-2013/1200	25.1/95.5	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-1.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

REMARKS:

WESTERLY TROUGH AT 500 HPA NOW RUNS ALONG 83°N, LEADING TO FASTER MOVEMENT OF THE SYSTEM. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND CONTINUES TO BE 5-10 KTS OVER THE SYSTEM. LOW LEVEL CONVERGENCE HAS DECREASED IN THE SOUTHWEST SECTOR OF THE SYSTEM AND IS HIGH IN THE NE SECTOR. THE SHEAR TENDENCY IS NEGATIVE OF THE ORDER 5 TO 10 KNOTS AROUND THE SYSTEM. THE PAST SIX HOURS. LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM AND LANDFALL OVER BANGLADESH COAST, CLOSE TO CHITTAGONG BETWEEN 18 UTC OF 16TH TO 00 UTC OF 17TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 12 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT 12 HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT 12HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(NARESH KUMAR)
METEOROLOGIST

TOO:150230 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.39
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0000 UTC OF 16th MAY 2013 BASED ON 2100 UTC CHARTS OF 15TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER WESTCENTRAL & ADJOINING EAST CENTRAL BAY OF BENGAL MOVED FURTHER NORTH-NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 20 KMPH AND LAY CENTRED AT 2100 UTC OF 15TH MAY 2013 NEAR LATITUDE 19.5⁰N AND LONGITUDE 89.0⁰E OVER NORTHWEST BAY OF BENGAL, ABOUT 960 KM NORTH-NORTHWEST OF PORTBLAIR (4333), 340 KM SOUTH-SOUTHEAST OF KOLKATA (42807), 260 KM EAST-SOUTHEAST OF PARADIP (42976) AND 430 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD INTENSIFY FURTHER AND MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST NEAR CHITTAGONG AROUND 1800 UTC OF TODAY, THE 16TH MAY 2013. MAXIMUM SUSTAINED WIND SPEED AT THE TIME OF LANDFALL WOULD BE 80-90 KMPH GUSTING TO 100 KMPH.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-3.0 REPEAT T3.0. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER NORTH BAY OF BENGAL NORTH OF LAT 18.0⁰ N AND NORTH COASTAL ORISSA, GANGETIC WEST BENGAL, BANGLADESH, TRIPURA, MIZORAM AND NORTH COASTAL ARAKAN. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -92⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
15-05-2013/2100	19.5/89.0	75-85 gusting to 95	Cyclonic Storm
16-05-2013/0000	19.9/89.5	80-90 gusting to 100	Cyclonic Storm
16-05-2013/0600	20.6/90.3	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1200	21.5/91.2	80-90 gusting to 100	Cyclonic Storm
16-05-2013/1800	22.4/92.1	80-90 gusting to 100	Cyclonic Storm
17-05-2013/0000	23.3/93.0	55-65 gusting to 75	Deep Depression
17-05-2013/1200	25.1/95.5	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-1.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

REMARKS:

WESTERLY TROUGH AT 500 HPA NOW RUNS ALONG 83°N, LEADING TO FASTER MOVEMENT OF THE SYSTEM. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND CONTINUES TO BE 5-10 KTS OVER THE SYSTEM. LOW LEVEL CONVERGENCE HAS DECREASED IN THE SOUTHWEST SECTOR OF THE SYSTEM AND IS HIGH IN THE NE SECTOR. THE SHEAR TENDENCY IS NEGATIVE OF THE ORDER 5 TO 10 KNOTS AROUND THE SYSTEM. THE PAST SIX HOURS. LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1. IT IS FAVOURABLE FOR INTENSIFICATION AND NORTH-NORTHEASTWARD MOVEMENT OF THE SYSTEM.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM AND LANDFALL OVER BANGLADESH COAST, CLOSE TO CHITTAGONG BETWEEN 18 UTC OF 16TH TO 00 UTC OF 17TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT 12 HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT 12 HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT FEW HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(NARESH KUMAR)
METEOROLOGIST

TOO:160530 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO.40
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0300 UTC OF 16th MAY 2013 BASED ON 0000 UTC CHARTS OF 16TH MAY 2013.

THE CYCLONIC STORM VIYARU OVER NORTHWEST BAY OF BENGAL MOVED NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 25 KMPH AND LAY CENTRED AT 0000 UTC OF 16TH MAY 2013 NEAR LATITUDE 20.0⁰N AND LONGITUDE 89.5⁰E OVER NORTHWEST BAY OF BENGAL, ABOUT 990 KM NORTH-NORTHWEST OF PORTBLAIR (4333), 310 KM SOUTH-SOUTHEAST OF KOLKATA (42807), 300 KM EAST OF PARADIP (42976) AND 360 KM SOUTHWEST OF CHITTAGONG (41977). IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST NEAR CHITTAGONG AROUND 1500 UTC OF TODAY, THE 16TH MAY 2013. MAXIMUM SUSTAINED WIND SPEED AT THE TIME OF LANDFALL WOULD BE 75-85 KMPH GUSTING TO 95 KMPH.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-3.0 REPEAT T3.0. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER NORTH BAY OF BENGAL NORTH OF LAT 18.0⁰N ADJOINING EASTCENTRAL BAY AND NORTHEAST ORISSA, GANGETIC WEST BENGAL, BANGLADESH, TRIPURA, MIZORAM AND NORTH COASTAL ARAKAN ADJOINING MYANMAR. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -94⁰C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
16-05-2013/0000	20.0/89.5	75-85 gusting to 95	Cyclonic Storm
16-05-2013/0600	20.9/90.4	75-85 gusting to 95	Cyclonic Storm
16-05-2013/1200	21.8/91.3	75-85 gusting to 95	Cyclonic Storm
16-05-2013/1800	22.7/92.2	55-65 gusting to 75	Deep Depression
17-05-2013/0000	23.5/93.1	45-55 gusting to 65	Depression
17-05-2013/1200	25.0/94.8	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-1.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

REMARKS:

WESTERLY TROUGH AT 500 HPA NOW RUNS ALONG 83°N, LEADING TO FASTER MOVEMENT OF THE SYSTEM. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND CONTINUES TO BE 5-10 KTS OVER THE SYSTEM. LOW LEVEL CONVERGENCE IS HIGH AROUND THE SYSTEM. THE SHEAR TENDENCY IS NEGATIVE OF THE ORDER 5 TO 10 KNOTS AROUND THE SYSTEM DURING PAST SIX HOURS. LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31°C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM AND LANDFALL OVER BANGLADESH COAST, CLOSE TO CHITTAGONG BETWEEN 18 UTC OF 16TH TO 00 UTC OF 17TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT FEW HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT FEW HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT FEW HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(NARESH KUMAR)
METEOROLOGIST

TOO:160830 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.41

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0500 UTC OF 16th MAY 2013 BASED ON 0300 UTC CHARTS OF 16TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER NORTH BAY OF BENGAL MOVED NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 25 KMPH AND LAY CENTRED AT 0300 UTC OF 16TH MAY 2013 NEAR LATITUDE 21.0° N AND LONGITUDE 90.0° E OVER NORTHWEST BAY OF BENGAL, ABOUT 240 KM SOUTH-SOUTHEAST OF KOLKATA AND 240 KM SOUTHWEST OF CHITTAGONG. IT WOULD MOVE NORTHEASTWARDS AND CROSS BANGLADESH COAST NEAR CHITTAGONG DURING EVENING OF 16TH MAY 2013.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5, C.I.-3.0. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER NORTH BAY OF BENGAL ADJOINING EAST CENTRAL BAY NORTH OF LAT 18.0° N ADJOINING EASTCENTRAL BAY AND NORTHEAST ORISSA ADJOINING SOUTHEAST JHARKHAND, GANGETIC WEST BENGAL, BANGLADESH, TRIPURA, MIZORAM AND NORTH COASTAL ARAKAN ADJOINING MYANMAR. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -83°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 988 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
16-05-2013/0300	21.0/90.0	75-85 gusting to 95	Cyclonic Storm
16-05-2013/0600	21.7/90.5	75-85 gusting to 95	Cyclonic Storm
16-05-2013/1200	22.5/91.6	75-85 gusting to 95	Cyclonic Storm
16-05-2013/1800	23.3/92.5	75-85 gusting to 95	Cyclonic Storm
17-05-2013/0000	24.2/93.4	55-65 gusting to 75	Deep Depression
17-05-2013/1200	25.5/95.0	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-1.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

REMARKS:

WESTERLY TROUGH AT 500 HPA NOW RUNS ALONG 83°N, LEADING TO FASTER MOVEMENT OF THE SYSTEM. THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND CONTINUES TO BE 5-10 KTS OVER THE SYSTEM. LOW LEVEL CONVERGENCE IS HIGH AROUND THE SYSTEM. THE SHEAR TENDENCY IS NEGATIVE OF THE ORDER 5 TO 10 KNOTS AROUND THE SYSTEM DURING PAST SIX HOURS. LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE. THE SEA SURFACE TEMPERATURE IS ABOUT 30- 31⁰C AND OCEAN THERMAL ENERGY IS MORE THAN 100 KJ/CM SQUARE OVER STORM AREA AND DECREASES GRADUALLY TOWARDS NORTH BAY OF BENGAL. THE MJO LIES IN PHASE 5 WITH AMPLITUDE >1.

DOPPLAR RADAR AT AGARTALA REPORTED THE CENTRE OF THE SYSTEM AT 180 KM SOUTH-SOUTHWEST OF AGARTALA AT 0300 UTC. THE SYSTEM IS MOVING PREDOMINANTLY IN NORTHEAST DIRECTION. MOST OF THE CLOUD MASS IS OVER THE LAND. MAXIMUM SUSTAINED WIND SPEED IS 40 KTS. HOWEVER THE CENTRE IS NOT WELL DEFINED.

MOST OF THE NWP MODELS SUGGEST NORTHEASTWARD MOVEMENT OF THE SYSTEM AND LANDFALL OVER BANGLADESH COAST, CLOSE TO CHITTAGONG AROUND 1200 UTC OF 16TH MAY 2013. HOWEVER, THERE IS LARGE DIVERGENCE IN THE NWP GUIDANCE WITH RESPECT TO INTENSIFICATION OF THE SYSTEM. GFS WEAKENS INTENSITY TOWARDS LANDFALL. ECMWF MODEL MAINTAINS CYCLONIC STORM INTENSITY FOR NEXT FEW HRS AND WEAKENS GRADUALLY THEREAFTER. DYNAMICAL STATISTICAL MODELS OF IMD SUGGEST MAINTENANCE OF INTENSITY OF CYCLONIC STORM TILL LANDFALL. JMA MAINTAINS INTENSITY OF CYCLONIC STORM TILL LANDFALL. HWRF MODEL INCREASES INTENSITY FOR NEXT FEW HRS AND DECREASES THEREAFTER AND CROSSING THE SYSTEM AS CYCLONIC STORM WITH WIND SPEED OF 45 KTS. UKMO MAINTAINS INTENSITY OF CYCLONIC STORM FOR NEXT FEW HRS AND WEAKENS THEREAFTER TOWARDS LANDFALL.

(M.MOHAPATRA)
SCIENTIST-E

TOO:161120 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.42

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 0800 UTC OF 16th MAY 2013 BASED ON 0600 UTC CHARTS OF 16TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER NORTH BAY OF BENGAL MOVED NORTH-NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 40 KMPH AND LAY CENTRED AT 0600 UTC OF 16TH MAY 2013 OVER NORTHEAST BAY OF BENGAL NEAR LATITUDE 22.5⁰ N AND LONGITUDE 91.0⁰ E, CLOSE TO HATIA ISLAND, BANGLADESH ABOUT 85 KM WEST-NORTHWEST OF CHITTAGONG (41977) AND 70 KM SOUTH-SOUTHWEST OF FENI (41943) (BANGLADESH). IT WOULD MOVE NORTH-NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN FENI AND CHITTAGONG DURING NEXT FEW HOURS.

ACCORDING TO SATELLITE IMAGERIES, SATELLITE ESTIMATED INTENSITY IS T-2.5. ASSOCIATED INTENSE TO VERY INTENSE CONVECTION ARE SEEN OVER NORTH BAY OF BENGAL ADJOINING EAST CENTRAL BAY NORTHEAST ORISSA, SOUTHEAST GANGETIC WEST BENGAL, BANGLADESH, TRIPURA, MIZORAM, MANIPUR, NAGALAND, MEGHALAYA, ASSAM, NORTH ARAKAN COAST ADJOINING MYANMAR . THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -71⁰C. SYSTEM IS CLOSE TO THE COAST.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ⁰ N/ Long. ⁰ E)	Sustained maximum surface wind speed (kmph)	Category
16-05-2013/0600	22.5/91.0	75-85 gusting to 95	Cyclonic Storm
16-05-2013/1200	24.0/92.5	55-65 gusting to 75	Deep Depression
16-05-2013/1800	25.5/94.0	45-55 gusting to 65	Depression
17-05-2013/0000	26.5/95.5	25-35 gusting to 45	Low

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 2-2.5 METRE ABOVE ASTRONOMICAL TIDE WOULD INUNDATE LOW LYING AREAS OF BANGLADESH COAST NEAR THE POINT OF LANDFALL.

REMARKS:

THE VERTICAL WIND SHEAR OF THE HORIZONTAL WIND CONTINUES TO BE 5-10 KTS OVER THE SYSTEM. LOW LEVEL CONVERGENCE IS HIGH AROUND THE SYSTEM. THE SHEAR TENDENCY IS NEGATIVE OF THE ORDER 5 TO 10 KNOTS AROUND THE SYSTEM DURING PAST SIX HOURS. HOWEVER, THE WIND SHEAR WOULD INCREASE AS THE SYSTEM MOVES OVER LAND LEADING TO GRADUAL WEAKENING OF THE SYSTEM. LATEST OCEANSAT WINDS SUGGEST 40 KTS AROUND THE SYSTEM CENTRE.

DOPPLAR RADAR AT AGARTALA REPORTED THE CENTRE OF THE SYSTEM AT 22.94°N, 91.25°E, 105 KM SOUTH OF AGARTALA AT 0711 UTC. THE SYSTEM IS MOVING PREDOMINENTLY IN NORTH-NORTHEAST DIRECTION.

AFTER THE LANDFALL THE SYSTEM WOULD WEAKEN GRADUALLY DUE TO INTERACTION WITH LAND SURFACE.

(KAMALJIT RAY)
SCIENTIST-E

TOO:161300 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

**TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**

TROPICAL CYCLONE ADVISORY NO.43

RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM ‘VIYARU’ ADVISORY ISSUED AT 1200 UTC OF 16th MAY 2013 BASED ON 0900 UTC CHARTS OF 16TH MAY 2013.

THE CYCLONIC STORM **VIYARU** OVER NORTHEAST BAY OF BENGAL MOVED NORTH-NORTHEASTWARDS DURING PAST 6 HOURS AT A SPEED OF ABOUT 50 KMPH **AND CROSSED BANGLADESH COAST BETWEEN CHITTAGONG AND FENI, NEAR LATITUDE 22.8°N AND LONGITUDE 91.4°E (ABOUT 30 KM SOUTH OF FENI), AROUND 1330 HOURS IST OF TODAY, THE 16TH MAY 2013.** IT LAY CENTRED AT 1430 HOURS IST OF 16TH MAY 2013 OVER BANGLADESH NEAR LATITUDE 23.5° N AND LONGITUDE 92.0° E, ABOUT 75 KM SOUTHWEST OF AIZAL (42727) AND 85 KM SOUTHEAST OF AGARTALA (42724). IT WOULD MOVE NORTH-NORTHEASTWARDS AND WEAKEN INTO A DEEP DEPRESSION DURING NEXT 3-6 HOURS.

ACCORDING TO SATELLITE IMAGERIES, ASSOCIATED MODERATE TO INTENSE CONVECTION IS SEEN OVER NORTH BAY OF BENGAL, GANGETIC WEST BENGAL, BANGLADESH, TRIPURA, MIZORAM, MANIPUR, NAGALAND, MEGHALAYA, ASSAM, WEST ARUNACHAL PRADESH AND NORTH ARAKAN COAST ADJOINING MYANMAR. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -51°C.

SUSTAINED MAXIMUM SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 35 KNOTS GUSTING TO 45 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA OVER NORTHEAST BAY OF BENGAL IS ROUGH TO VERY ROUGH.

BASED ON LATEST ANALYSIS WITH NWP MODELS AND OTHER CONVENTIONAL TECHNIQUES, ESTIMATED TRACK AND INTENSITY OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. °N/ Long. °E)	Sustained maximum surface wind speed (kmph)	Category
16-05-2013/0900	23.5/92.0	75-85 gusting to 95	Cyclonic Storm
16-05-2013/1200	24.0/92.5	55-65 gusting to 75	Deep Depression
16-05-2013/1800	25.5/94.0	45-55 gusting to 65	Depression
17-05-2013/0000	26.5/95.5	25-35 gusting to 45	Low

THIS IS THE LAST BULLETIN FOR THIS SYSTEM.

(KAMALJIT RAY)
SCIENTIST-E

TOO:161600 HRS IST