



No. F.2 (E)/2023-NDMA (TC Alert-XXI)
Government of Pakistan
Prime Minister's Office
National Disaster Management Authority
Islamabad

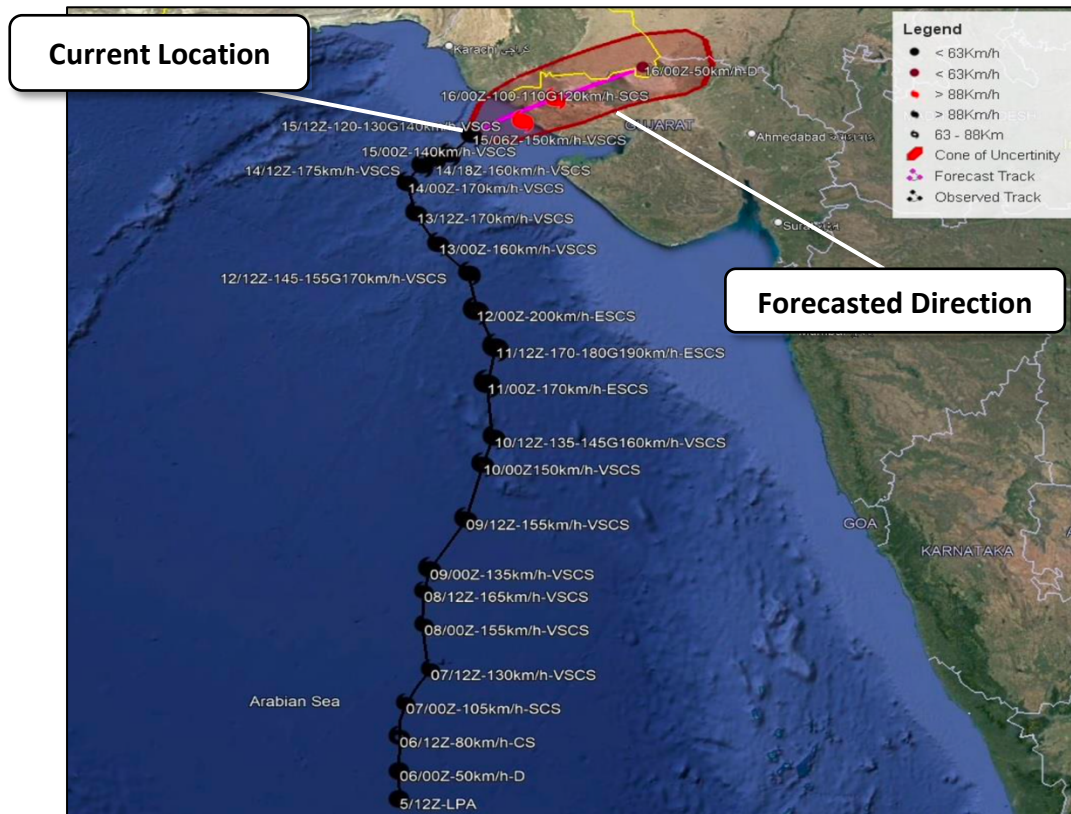


Dated: 15 June 2023
1530 hours

Subject: **Very Severe Cyclonic Storm "BIPARJOY" Over Northeast Arabian Sea**
Reference: NDMA TC-Advisory No.F.2(E)/2023-NDMA(TC-Alert-XX) dated 15 Jun 2023

In continuation of above referred TC Advisory, PMD has released following updates of the **Very Severe Cyclonic Storm (VSCS) "BIPARJOY"** (press release attached as **Annex A**): -

- a. Location - Latitude 22.9°N & Longitude 67.4°E
- b. Distance from Keti Bandar - 130 km South-Southwest (**Landfall TODAY**)
- c. Distance from Karachi - 220 km South
- d. Distance from Thatta - 210 km South
- e. Wind Speed - Sustained 120-140 km/h, 150 km/h gusts
- f. Forecasted Direction - Northeast



2. Currently, cyclone reinforcing environmental conditions are maintaining VSCS BIPARJOY's strength. The system will **keep tracking Northeastward** and **cross between Keti Bandar** (Southeast Sindh) and **Indian Gujrat Coast** by **TODAY, 15 June 2023** as a **Very Severe Cyclonic Storm** (probability model at **Annex B**) with **100-120 km/h** winds and **140 km/h** gusts.

3. The predicted development path based on international weather forecasting models used by PMD is enclosed as **Annex C**, for proactive preparations against impacts. **It must be highlighted that the impacts of this evolving situation will only be certain with further development of the system.**

4. Possible impacts under the current forecast are as under: -

- a. **Widespread wind-dust / thunderstorm / rain** with **very to extremely heavy falls & squally winds** (100-120 km/h) with **gusts** (140 km/h) expected in Districts **Thatta, Sujawal, Badin, Tharparkar, Mirpurkhas & Umerkot** from **15 - 17 June 2023**.
- b. **Dust / thunderstorm / rain**, with few **heavy falls & gusty winds** (60-80 km/h) likely in Districts **Karachi, Hyderabad, Tando Muhammad Khan, Tando Allayar, Shaheed Benazirabad, Sanghar** from **15 - 16 June 2023**.
- c. **Dust / thunderstorm / rain**, with **isolated heavy falls** are likely in Districts **Hub, Lasbella, and Khuzdar** from **15 - 16 June**.
- d. Squally / **highspeed-intensity winds** may **damage loose structures, kacha houses**, under construction buildings, **solar panels, trees and billboards** along coastal areas and surroundings.
- e. **Sea conditions** along **Sindh coast** may get **very rough / high** (2 - 2.5 metres) and **rough / very rough** (2 metres) along **Balochistan coast** in **Sonmiani, Hub, Kund Malir, Ormara** and surrounding regions.
- f. **High risk of coastal flooding** in Districts **Badin and Thatta** as cyclone progresses / reaches coastline.
- g. Given anticipated sea conditions, **fishermen in Sindh and Balochistan will not be able venture** into open sea **until 17 June 2023**.
- h. **High risk of storm surge of 3-4 metres** (10-13 feet) along coastline from Karachi to Indian Gujrat, **especially at landfall point in Keti Bandar & surrounding areas**, which may be **exasperated twice daily by occurrence of high tide**. Details of high tide times as **provided by National Institute of Oceanography (NIO)** are below: -

Day	Keti Bandar		Sir Creek		Karachi		Gharo	
	1st High Tide	2nd High Tide	1st High Tide	2nd High Tide	1st High Tide	2nd High Tide	1st High Tide	2nd High Tide
Tue 13	7:31am ▲ 2.5 m	6:42pm ▲ 2.9 m	8:26am ▲ 2.3 m	7:37pm ▲ 2.7 m	7:31am ▲ 2.2 m	6:42pm ▲ 2.6 m	7:31am ▲ 2.2 m	6:42pm ▲ 2.6 m
Wed 14	8:39am ▲ 2.7 m	7:30pm ▲ 2.9 m	9:34am ▲ 2.5 m	8:25pm ▲ 2.7 m	8:39am ▲ 2.4 m	7:30pm ▲ 2.6 m	8:39am ▲ 2.4 m	7:30pm ▲ 2.6 m
Thu 15	9:32am ▲ 2.9 m	8:15pm ▲ 2.9 m	10:27am ▲ 2.7 m	9:10pm ▲ 2.7 m	9:32am ▲ 2.6 m	8:15pm ▲ 2.6 m	9:32am ▲ 2.6 m	8:15pm ▲ 2.6 m
Fri 16	10:17am ▲ 3 m	8:56pm ▲ 2.8 m	11:12am ▲ 2.8 m	9:51pm ▲ 2.6 m	10:17am ▲ 2.7 m	8:56pm ▲ 2.5 m	10:17am ▲ 2.7 m	8:56pm ▲ 2.5 m
Sat 17	10:56am ▲ 3.1 m	9:36pm ▲ 2.8 m	11:51am ▲ 2.9 m	10:31pm ▲ 2.6 m	10:56am ▲ 2.8 m	9:36pm ▲ 2.5 m	10:56am ▲ 2.8 m	9:36pm ▲ 2.5 m

5. The guidelines, in addition to any measures already undertaken by stakeholders, are outlined as under: -

a. **PDMA / DDMA's**

- (1) Continuously **monitor the development of the cyclone** and maintain **immediate coordination** through respective **emergency operation centers**.
- (2) Ensure all **emergency operation centers have backup power** generators and uninterrupted communication systems for continuous coordination.
- (3) Utilize **multiple communication channels** for continuous awareness campaigns, including **television, radio, social media** and **SMS alerts**, to inform coastal and adjoining communities about **emergency evacuation procedures, relief camp locations** and important **safety measures**.
- (4) Coordinate with PDMA's, DDMA's, Rescue Agencies, and concerned departments to **ensure the safety of people and structures in high-risk and low-lying areas** vulnerable to **storm surges, coastal flooding, urban flooding and gusty winds**.
- (5) Coordinate with all relevant authorities to **ensure timely and complete evacuation** of people from vulnerable coastal and low-lying areas.
- (6) Coordinate with district and municipal administrations to implement **protective measures for thunderstorms, flash flooding, high-speed winds, storm surge**, and the **removal of billboards/hoardings**.
- (7) Stock **essential relief items**, including food, paramedics, and medicine, in regions likely to be cut-off during severe weather.
- (8) Ensure **individuals in unsecured mud ("kacha") houses** and low-lying areas have **evacuated and sought shelter** in sturdier buildings or higher ground for personal safety.
- (9) Coordinate with relevant departments, including NHA, FWO, C&W, and line departments, to **assess and prepare for damage to roads, bridges, and critical infrastructure**.
- (10) Ensure **stock and functionality of necessary equipment and resources** for rapid response and recovery operations, including **road clearance** and **restoration of utility services**.
- (11) Coordinate with electric companies i.e. K-Electric and enact **safety measures to prevent electrical hazards** during the cyclone and **restore services** in case of disruptions.

- (12) Ensure **hospitals are fully staffed and on alert status**, with alternate energy sources such as generators, to provide **uninterrupted medical services** during power outages.
- (13) Advise relevant district administrations to take **protective measures in low-lying areas against storm surge activity**.
- (14) Take necessary measures to address **inundation issues** caused by heavy rainfall, coastal floods, and storm surges in Karachi and surrounding regions.
- (15) Proactively **implement dewatering plans for underpasses** in Karachi to prevent urban flooding.
- (16) Ensure the availability of dewatering pumps at vulnerable points.
- (17) Ensure the **functionality and emergency maintenance** of nullahs/sewerage systems to **prevent waterlogging and drainage issues**.
- (18) **NEOC at NDMA** is operational **round the clock for TC BIPARJOY timely monitoring and coordination**. All concerned to timely / repeatedly / proactively update NDMA and other stakeholders on the cyclone's progress, potential impacts, and response measures.

b. **Rescue Services (1122 / Civil Defence / Fire / Ambulance)**

- (1) Continuously **assess and reinforce emergency personnel** staffing.
- (2) **Activate emergency teams** at critical and vulnerable locations for immediate response readiness.
- (3) **Monitor and maintain rescue vehicles and equipment** to address cyclone-related issues.
- (4) Prioritize **safe and efficient completion** of ongoing emergency evacuation efforts as directed by PDMA, DDMA, and District Administrations.
- (5) Establish effective communication / coordination for **deploying additional HR support** from Rescue 1122 Punjab.
- (6) Maintain **situational awareness through regular updates** from meteorological agencies for adaptive response strategies.
- (7) **Reinforce communication channels for critical updates** and instructions to deployed personnel and affected population.
- (8) Implement **measures to safeguard deployed personnel's well-being**, including rest rotations, essential supplies, and support systems.

c. **Law Enforcement Agencies**

- (1) **Maintain optimal staffing levels** to effectively respond to the emergency situation.

- (2) **Provide support** to expedite / ensure the **successful completion of emergency evacuation efforts** in accordance with directives from PDMA, DDMA, and District Administrations.
- (3) Establish and enforce measures to **enhance security of evacuation zones**, ensuring the safety of **evacuated individuals** and **their belongings**.
- (4) Take necessary actions to **maintain law and order in disaster-affected areas**.
- (5) **Implement travel restrictions** to prevent individuals from entering vulnerable areas at-risk of adverse weather conditions, safeguarding their safety and reducing potential rescue operations.

d. **Fisheries Department**

- (1) **Enforce strict prohibition on fishermen venturing into the open sea** during the cyclone's landfall today to ensure their safety.
- (2) Collaborate with port authorities to **identify secure harbors and provide clear instructions** for securing boats and equipment to prevent damage and hazards in the strong winds.

e. **Port Authorities**

- (1) Implement stringent measures to **secure vessels at berths in the harbor**, ensuring all lines are properly secured and strengthened.
- (2) Ensure **thorough securing of loose equipment on board ships** to prevent any potential dangers during the cyclone.
- (3) **Secure and protect open equipment/items in harbor areas** to minimize the risk of damage or accidents.

f. **Health Department / Hospitals**

- (1) **Activate emergency medical facilities** such as field hospitals and mobile clinics in areas directly affected by the cyclone, equipped with essential medical supplies, including oxygen cylinders and life-saving drugs.
- (2) **Prepare hospitals for emergency admissions**, ensuring sufficient capacity, resources, and medical staff to **handle the influx of patients**.
- (3) **Deploy mobile medical teams and equipment** to provide immediate medical assistance to disaster-affected areas.
- (4) Maintain an **ample stockpile of essential medicines** to meet the increased demand during the cyclone.
- (5) **Keep Basic Health Units / Rural Health Units on high alert** and ready to respond to any emergency situations.
- (6) **Ensure optimal staffing levels** with adequate doctors, nurses, and paramedics to **provide uninterrupted medical services**.

g. **National Highway Authority (NHA) / Provincial Highway Authority**

- (1) Collaborate closely with local authorities and transport departments to **immediately address road closures and obstructions** caused by the cyclone, **establishing alternative routes and detours**.
- (2) **Mobilize heavy earthmoving machinery to clear critical chokepoints** and ensure **the restoration of blocked/disrupted road arteries**.
- (3) Conduct **immediate assessments** of bridges, flyovers, and culverts in vulnerable areas for any damages and prioritize prompt repairs or reinforcement for public safety.

h. **Electric DISCO / K-Electric**

- (1) **Maintain a high level of vigilance** among maintenance staff for the emergency restoration of disrupted electrical services during and after the cyclone.
- (2) **Pre-position emergency maintenance teams** for rapid deployment to affected areas once conditions permit.
- (3) **Ensure the availability of dewatering equipment** at vulnerable and critical grid stations to handle any flooding or water-related issues.
- (4) **Continuously monitor power grids** to promptly detect and address faults, tripping, or electrical hazards throughout the cyclone.
- (5) **Deploy additional electrical crews and equipment** to assist in power restoration efforts in severely affected areas as soon as it is safe to do so.

i. **Pakistan Electronic Media Regulatory Authority (PEMRA)**

- (1) **Ensure immediate and continuous broadcast** of advisories, alerts, and public awareness messages issued by Disaster Management Authorities through all public and private media outlets, with regular intervals, particularly during prime time.
- (2) **Disseminate information** in local languages, including Sindhi, Balochi, Seraiki, etc., to reach a wider audience and ensure effective communication with local communities.
- (3) **Strictly monitor and prevent** the broadcast of false or misleading information by media outlets to avoid confusion and maintain public trust.

j. **Pakistan Telecommunications Authority (PTA)**

- (1) **Facilitate the dissemination** of warnings and advisories through Cellular Mobile Operators (CMOs) to reach the maximum number of people in affected areas.

- (2) **Prioritize the swift restoration** of disrupted telecommunication services in the cyclone-affected areas to enable effective communication and coordination.
 - (3) **Coordinate with CMOs** for the deployment of Mobile COWs (Cell on Wheels) to ensure the availability of uninterrupted telecom services in the affected areas.
 - (4) **Establish robust communication protocols** for emergency responders and field teams to ensure seamless coordination and exchange of critical information during the cyclone.
 - (5) **Ensure backup communication links** are in place to address any disruptions to the terrestrial communication infrastructure.
- k. **Armed Forces (Army, Navy, Air Force, Maritime Security, Coast Guards)**
- (1) **Ensure the safety and maintenance** of troops, personnel, aviation assets, rescue boats, and hovercraft to support rescue and relief operations during and after the cyclone, allocating additional resources as necessary.
 - (2) **Safeguard the well-being** of search and rescue personnel deployed in coastal areas, taking necessary precautions to ensure their safety during emergencies.
 - (3) **Maintain availability of assets and personnel** for conducting reconnaissance of disaster-affected areas to assess the extent of damage and prioritize relief efforts.
 - (4) **Fully stock relief and medical camps**, ensuring an adequate supply of essential resources to assist the affected population, and allocate additional resources as needed.
 - (5) **Provide immediate assistance** to the Local Administration in the disaster-affected areas, supporting their efforts to mitigate the impact and provide relief to affected communities.
- l. **Pakistan Meteorological Department (PMD)**
- (1) In light of the rapid intensification of cyclonic system, **issue two-hourly advisories, ensuring timely dissemination** to all stakeholders and DM Organizations.
 - (2) Ensure close **collaboration with NDMA's Technical Team** to timely assess region-specific impacts.
- m. **SUPARCO**
- (1) Prepare and **provide daily inundation projections to NDMA**, detailing the impacts of TC BIPARJOY on low-lying / coastal / adjoining areas.

n. **Local Communities**

- (1) Engage local communities at traditionally / historically hazard-prone sites to enable **round-the-clock monitoring**.
- (2) Advise local communities to **adhere to directives of Local Administration** on emergency evacuation procedures.
- (3) Advise **fishermen to exercise appropriate caution** while in coastal areas.
- (4) **Fishermen in Sindh and Balochistan to NOT VENTURE into the open sea until 17 June 2023.**
- (5) Establish a reliable communication system to deliver **real-time weather updates and guidance to fishing communities**.
- (6) **Farmers / cattle herders** to be advised to take all necessary mitigative and precautionary measures to **safeguard their crops and livestock**, i.e. timely harvesting, safe storage, safe sheltering or any precaution from adverse effects of dust-wind-thunderstorms.
- (7) **Stay away from electric poles and wires** during the cyclone to avoid electrical hazards.
- (8) Ensure you have **essential supplies**, including a hurricane lantern, flashlight, important documents and spare batteries.
- (9) **Stock up on non-perishable food and store extra drinking water** in covered containers.
- (10) **Evacuate low-lying beaches and flood-prone areas** before they become inaccessible due to rising tides or flooding.
- (11) Stay **vigilant for high water** in areas near rivers or streams during **heavy rainfall**.
- (12) **Remove and store objects that can become projectiles** in strong winds.
- (13) Follow the **instructions of authorities and remain in shelters** until you are informed it is safe to return home.
- (14) Avoid **touching loose or dangling wires** and keep away from disaster areas unless you are involved in assisting with relief efforts.

6. **PDMA Punjab & Khyber Pakhtunkhwa**. Ensure readiness to provide necessary support and assistance including rescue, relief and medical to disaster affected areas of Balochistan and Sindh as required.

7. **Two hourly updates on developing the weather system will be uploaded on NDMA's website and social media handles for reference of all stakeholders.** All concerned are requested to **ensure continuous monitoring and proactive preparations** against likely impacts.

8. Forwarded for your information / further necessary action, please.



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Director (Response)
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Fax No: 051-9030729

(Distribution List Below)

Distribution List

- To: Chief Secretary, Government of Balochistan, Quetta
Chief Secretary, Government of Sindh, Karachi
Chief Secretary, Government of Khyber Pakhtunkhwa, Peshawar
Chief Secretary, Government of Punjab, Lahore
Secretary, Ministry of Interior, Islamabad
Secretary, Ministry of Communications, Islamabad
Secretary, Ministry of Maritime Affairs, Islamabad
Director General, Pakistan Meteorological Department, Islamabad
Directorate General Ports & Shipping, Karachi
Chairman, National Highway Authority, Islamabad
Inspector General, National Highways & Motorway Police, Islamabad
Chairman, Pakistan Electronic Media Regulatory Authority, Islamabad
Chairman, Pakistan Telecommunications Authority, Islamabad
Principal Information Officer, Press Information Department, Islamabad
Headquarters, Pakistan Maritime Security Agency, Karachi
Headquarters, Pakistan Coast Guard, Karachi
Director General, PDMA Balochistan, Quetta
Director General, PDMA Sindh, Karachi
Director General, PDMA Khyber Pakhtunkhwa, Peshawar
Director General, PDMA Punjab, Lahore
Chairman, Karachi Port Trust
Chairman, Port Qasim Trust
Secretary, Department of Fisheries, Balochistan
Secretary, Department of Fisheries, Karachi
Secretary, Department of Fisheries, Quetta
Director General, Rescue 1122 Balochistan, Quetta
Director General, Rescue 1122 Sindh, Karachi
Headquarters, Frontier Works Organization (FWO), Rawalpindi
Commissioner Karachi Division
Commissioner Hyderabad Division
SACRED, SUPARCO, Islamabad
Chief Meteorologist, Tropical Cyclone Warning Centre (PMD), Karachi
Director, National Institute of Oceanography, Karachi
Chairman, Balochistan Coastal Development Authority, Gwadar
Chairman, Sindh Coastal Development Authority, Karachi
Managing Director, K-Electric Karachi
Country Coordinator, UNOCHA, Islamabad
Coordinator, Welthungerhilfe (WHH), Islamabad
Country Coordinator, Pakistan Humanitarian Forum, Islamabad
Chairperson, National Humanitarian Network, Islamabad
- Cc: Secretary to Prime Minister, Prime Minister's Office, Islamabad
Secretary, Cabinet Division, Islamabad
Chairman, Federal Flood Commission, Islamabad
Joint Crises Management Cell, Joint Staff Headquarters, Chaklala Cantt
Staff Duties Directorate (SD Coord), COAS Sectt, GHQ, Rawalpindi
Military Operations Directorate (MO-4), General Headquarters, Rawalpindi Cantt ACNS (Operations), Naval Headquarters, Islamabad
ACAS (Operations), Air Headquarters, Islamabad
GSO-1, Inter-Services Public Relations, General Headquarters, Rawalpindi Cantt

PMD PRESS RELEASE – TC ALERT 23

Government of Pakistan
 Ministry of Aviation
 Marine Meteorology and Tropical Cyclone Warning Centre
Pakistan Meteorological Department
 University Road Karachi-75270

Tel: 021-99261417
 Fax: 021-99261405

TC- Alert 23 (Warning # 9 for Southeast Sindh-Thatta, Sujawal, Badin, Tharparker, Umerkot & Mirpurkhas)

Date: 15 June 2023
 Time: 0900 PST

Very Severe Cyclonic Storm (BIPARJOY) over Northeast Arabian Sea

The Very Severe Cyclonic Storm (VSCS) “BIPARJOY” over northeast Arabian Sea has moved north-northeastward during last 06 hours and now lies near Latitude 22.8°N & Longitude 67.0°E at a distance of about 230km south of Karachi, 235km south Thatta and 155km south- southwest of Keti Bandar. Maximum sustained surface winds are 120-140 Km/hour gusts 150 Km/hour around the system center and sea conditions being phenomenal around the system center with maximum wave height 25-30 feet. The favorable environmental conditions (sea surface temperature of 29-30°C, low vertical wind shear & upper-level divergence) are in support to sustain its strength through the forecast period.

Under the existing upper-level steering winds, the VSCS “BIPARJOY” is likely keep tracking Northeastward and cross between Keti Bandar (Southeast Sindh) and Indian Gujarat coast on 15 June evening as a **Very Severe Cyclonic Storm (VSCS)** with packing winds of 100-120 Km/hour gusting 140 km/hour. PMD’s cyclone warning center, Karachi is continuously monitoring the system and will issue update accordingly.

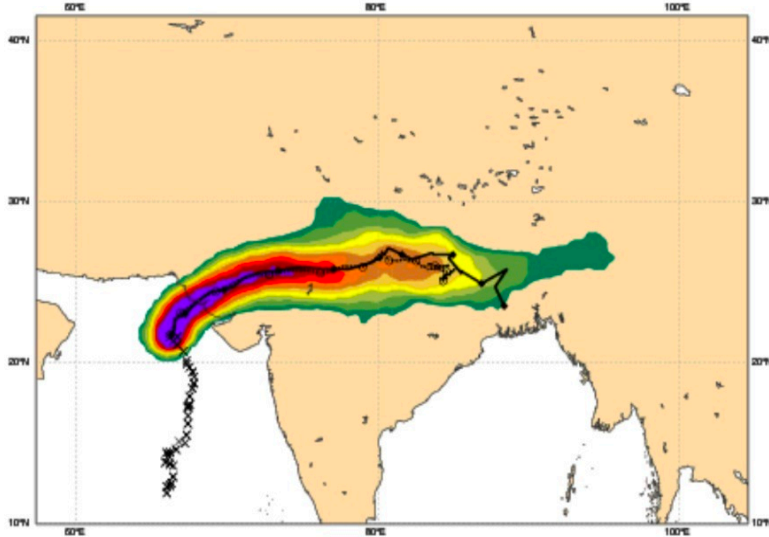
Possible Impacts:

- With its probable approach to the southeast Sindh coast, widespread wind-dust/thunderstorm rain with some very heavy/extremely heavy falls accompanied with squally winds of 100-120Km/hour gusting 140km/hour likely in Thatta, Sujawal, Badin, Tharparker, Mirpurkhas & Umerkot districts from 15-17 June.
- Dust/thunderstorm-rain with few heavy falls & accompanied with squally winds of 60-80 Km/hour likely in Karachi, Hyderabad, Tando Muhammad Khan, Tando Allayar, Shaheed Benazirabad & Sanghar districts on today and tomorrow.
- Dust/thunderstorm-rain with isolated heavy falls likely in Hub, Lasbella & Khuzdar districts of Balochistan today & tomorrow.
- Squally (high intensity) winds may cause damage to loose & vulnerable structures (Kutchha houses) including solar panels etc.
- Storm surge of 3-4 meters (10-13 feet) expected at the land falling point (Keti Bandar and around) which can inundate the low-lying settlements.
- Sea conditions along Sindh coast may get very rough/ high (2-2.5 meter) and rough/ very rough (2 meter) along Balochistan coast (Sonmiani, Hub, Kund Malir. Ormara and surroundings).
- Fishermen are advised not to venture in open sea till the system is over by 17 June.

TROPICAL CYCLONE STRIKE PROBABILITY

Date 20230614 00 UTC @ECMWF
 Probability that **BIPARJOY** will pass within 120 km radius during the next 240 hours
 tracks: **solid**=HRES; **dot**=Ens Mean [reported minimum central pressure (hPa) **951**]

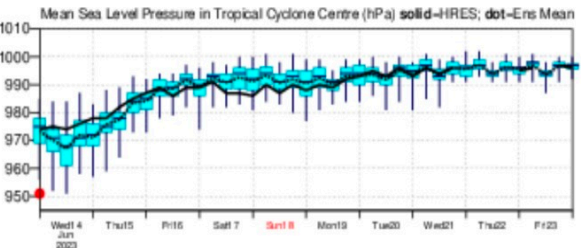
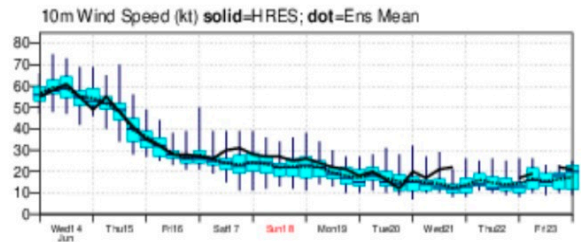
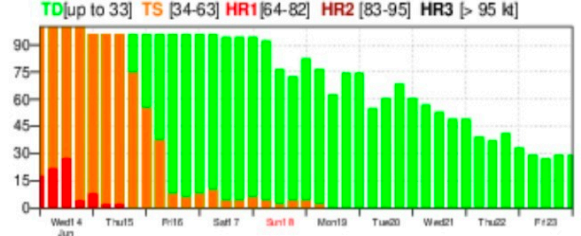
■ 5-10 ■ 10-20 ■ 20-30 ■ 30-40 ■ 40-50 ■ 50-60 ■ 60-70 ■ 70-80 ■ 80-90 ■ > 90%



List of ensemble members numbers forecast Tropical Cyclone
 Intensity category in colours: **TD**[up to 33] **TS**[34-63] **HR1**[64-82] **HR2**[83-95] **HR3**[> 95 kt]

+024 h	hr 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15	17 18 19 20 21 22 23	26 28 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	42 43 44 45 46 47 48 49 50
+048 h	hr 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15	17 18 19 20 21 22 23	26 28 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	42 43 44 45 46 47 48 49 50
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+192 h	hr 01 02 03 10 14 15	20 21 23	26 28 27 28	33 38 38 39 40 41 43 45 46 48 50
+216 h	hr 01 03 04 10 14 15	23 25 27	28	36 35 40 41 43 45 46 48 50
+240 h	hr 01 03 04 10 14	21 23 27 28	35 38 38 40 41	45

Probability (%) of Tropical Cyclone Intensity falling in each category



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FORECASTED PATH – TROPICAL CYCLONE “BIPARJOY”

