



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



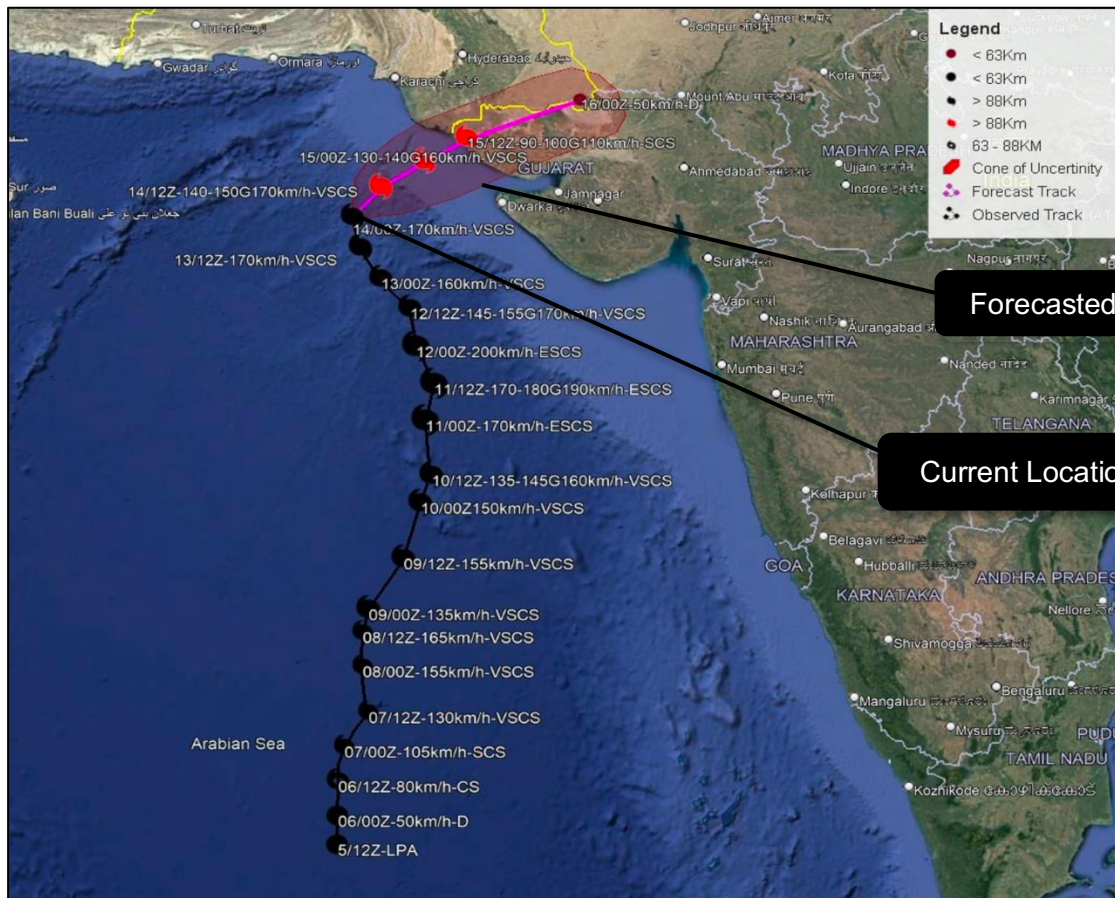
Dated: 14 June 2023
 1530 hours

Subject: **Very Severe Cyclonic Storm "BIPARJOY" Over Northeast Arabian Sea**

Reference: NDMA TC-Advisory No.F.2(E)/2023-NDMA(TC-Alert-XVII) dated 14 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**): -

- Location - Latitude 21.7°N & Longitude 66.4°E
- Distance from Keti Bandar - 290 km South-Southwest
- Distance from Karachi - 370 km South-Southwest
- Distance from Thatta - 355 km South-Southwest
- Wind Speed - Sustained 150-160 km/h, 180 km/h gusts
- Forecasted Direction - North-Northeastward



2. Currently, cyclone reinforcing environmental conditions are maintaining VSCS BIPARJOY's strength. The system is **now likely to recurve North-Northeastward** and **cross between Keti Bandar** (Southeast Sindh) **and Indian Gujrat Coast on 15 June** (evening) as

a **Very Severe Cyclonic Storm** (strike probability in **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 likely 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** (80-100 km/h) with **gusts** (120 km/h) expected in Districts **Thatta, Sujawal, Badin, Tharparkar, Mirpurkhas & Umerkot** from **14 - 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 **14 - 16 June 2023**.
- c. **Dust / thunderstorm / rain**, with **isolated heavy falls** are likely in Districts **Hub and Lasbella** from **14 - 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 3-3.5 metres** (8-12 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	6:42pm	8:26am	7:37pm	7:31am	6:42pm	7:31am	6:42pm
	▲ 2.5 m	▲ 2.9 m	▲ 2.3 m	▲ 2.7 m	▲ 2.2 m	▲ 2.6 m	▲ 2.2 m	▲ 2.6 m
Wed 14	8:39am	7:30pm	9:34am	8:25pm	8:39am	7:30pm	8:39am	7:30pm
	▲ 2.7 m	▲ 2.9 m	▲ 2.5 m	▲ 2.7 m	▲ 2.4 m	▲ 2.6 m	▲ 2.4 m	▲ 2.6 m
Thu 15	9:32am	8:15pm	10:27am	9:10pm	9:32am	8:15pm	9:32am	8:15pm
	▲ 2.9 m	▲ 2.9 m	▲ 2.7 m	▲ 2.7 m	▲ 2.6 m	▲ 2.6 m	▲ 2.6 m	▲ 2.6 m
Fri 16	10:17am	8:56pm	11:12am	9:51pm	10:17am	8:56pm	10:17am	8:56pm
	▲ 3 m	▲ 2.8 m	▲ 2.8 m	▲ 2.6 m	▲ 2.7 m	▲ 2.5 m	▲ 2.7 m	▲ 2.5 m
Sat 17	10:56am	9:36pm	11:51am	10:31pm	10:56am	9:36pm	10:56am	9:36pm
	▲ 3.1 m	▲ 2.8 m	▲ 2.9 m	▲ 2.6 m	▲ 2.8 m	▲ 2.5 m	▲ 2.8 m	▲ 2.5 m

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

a. **PDMA / DDMA's**

- (1) Ensure **vigilant monitoring of the tropical cyclone's development** and ensure **proactive coordination** through respective emergency operation centres.
- (2) Ensure **functionality of early warning systems** and ensure prompt dissemination of **timely and accurate information** to at-risk communities.
- (3) Utilize **multiple communication channels**, such as **television, radio, social media** and **SMS alerts**, to conduct extensive and continuous **awareness campaigns** to effectively reach coastal communities, educate the public on the **potential impacts** of the cyclone, **emergency evacuation procedures** and **safety measures**.
- (4) Respective PDMA's/DDMA's, **Rescue Agencies** (Rescue 1122, Civil Defence, Fire Departments, Paramedics), and concerned departments may identify **high-risk / low lying areas prone to storm surges, coastal flooding, urban flooding**, high speed winds and **develop / enact evacuation plans** accordingly.
- (5) Coordinate with relevant district and municipal administrations to ensure **preparedness measures for thunderstorms/flash flooding, highspeed winds, storm surge** and secure or remove billboards/hoardings.
- (6) Ensure **immediate stocking of basic commodities** including **paramedics & medicine**, especially in regions that are likely to get cut-off during severe weather events.
- (7) Collaborate with relevant authorities, including law enforcement agencies and transportation departments, to facilitate the **safe evacuation of people from vulnerable coastal areas/low-lying areas**.
- (8) Advise individuals residing in **unsecured mud ("kacha") houses and low-lying areas** to **seek shelter** in sturdier / more secure buildings, higher ground

for personal safety.

- (9) Coordinate with relevant departments, including NHA/FWO/C&W and line departments, to **assess and prepare for any potential damage to roads, bridges**, and other **critical infrastructure**.
- (10) Ensure the availability 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 should ensure safety measures are in place to **prevent electrical hazards** during the cyclone and ensure rapid restoration of services in case of disruption.
- (12) Take all necessary measures to **address inundation issues** in Karachi, Hyderabad, Bhanbore Divisions and surrounding regions, caused by heavy rainfall, coastal floods and storm surges.
- (13) Implement **dewatering plans for underpasses in Karachi** to prevent urban flooding.
- (14) Ensure availability of dewatering pumps at vulnerable points.
- (15) Ensure **functionality of nullahs/sewerage systems** and ensure their proper maintenance on an emergency basis to **prevent waterlogging and drainage issues**.
- (16) Coordinate with **hospitals to place them on alert status and arrange alternate energy sources**, such as generators, in case of power outages to ensure uninterrupted medical services.
- (17) Advise relevant District Administrations to **take precautionary measures in low lying areas against effects from storm surge activity**.
- (18) **NEOC at NDMA** has been made functional **round the clock for TC BIPARJOY monitoring and coordination**. All concerned to timely and 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) Ensure availability of emergency staff in light of present situation.
- (2) Pre-place **emergency teams at critical / vulnerable locations** for rapid deployment.
- (3) Ensure **availability of rescue vehicles / equipment** for use by emergency teams.
- (4) Support **emergency evacuation efforts** in line with directives from PDMA / DDMA's and District Administrations.

- (5) Coordinate any **necessary additional HR support** required from Rescue 1122 Punjab.

c. **Law Enforcement Agencies**

- (1) Ensure **availability of personnel / staff in light of emergency** situation.
- (2) Support **emergency evacuation efforts** in line with directives from PDMA / DDMA's and District Administrations.
- (3) Ensure security of evacuation zones.
- (4) Ensure law and order situation is maintained in disaster affected areas.
- (5) Advise / **restrict travelers into vulnerable areas** which are at-risk of inclement / adverse weather conditions.

d. **Fisheries Department**

- (1) Restrict fishermen from venturing to open sea in light of adverse / rough sea state until 17 June 2023.
- (2) Advise fishermen to secure loose equipment and boats at harbour.

e. **Port Authorities**

- (1) Ensure vessels are secured at berths in harbour with all lines secured.
- (2) Ensure loose equipment on board ships are secured to prevent untoward situation.
- (3) Ensure open equipment / items in harbour areas are secured or under shelter.

f. **Health Department / Hospitals**

- (1) Ensure **readiness of hospitals for emergency** intake of patients.
- (2) Ensure **ready stockpile of essential medicines**.
- (3) Prepare Basic Health Units / Rural Health Units to **remain vigilant and prepared** for emergency situation.
- (4) Ensure **full staffing (doctors / nurse / paramedics) of medical facilities** in light of present situation.
- (5) Ensure **availability of mobile medical teams / equipment** to ready for **deployment to disaster affected areas**.

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

- (1) Ensure **readiness of contractors for emergency** deployment / restoration efforts.
- (2) Pre-placement of **heavy earth moving machinery at critical chokepoints**.
- (3) Ensure **restoration of blocked / disrupted road arteries** on priority basis.

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

- (1) Ensure **availability of maintenance staff for emergency** restoration of disrupted services.

- (2) Pre-place emergency **maintenance teams for rapid deployment** to affected areas.
- (3) Ensure **availability of de-watering equipment** at vulnerable / critical grid stations and electrical infrastructure in case of any eventuality.

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

- (1) Ensure advisories / alerts and public awareness messages from Disaster Management Authorities are **repeated / broadcast by all public and private media outlets at regular intervals, especially at prime time.**
- (2) Ensure **dissemination of information in local languages**, including Sindhi, Balochi, Seraiki, etc.
- (3) Ensure that **false information is not broadcast** by media outlets.

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

- (1) Ensure **dissemination of early warnings / advisories** through Cellular Mobile Operators (CMOs).
- (2) Ensure **timely restoration of disrupted telecommunication services** in affected areas.
- (3) Coordinate with CMOs for **deployment of Mobile COWs** for availability of telecom services in affected areas.

k. **Armed Forces (Army, Navy, Air Force, Maritime Security, Coast Guards)**

- (1) Ensure **availability of troops / personnel, aviation assets, rescue boats / hovercraft** to support rescue and relief operations.
- (2) Ensure **availability of assets / personnel to conduct reconnaissance** of disaster affected areas.
- (3) Ensure **readiness for establishment of relief / medical camps** to assist disaster affectees.
- (4) Provide **any available assistance necessary to Local Administration** in disaster affected areas.

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.



(Muhammad Ali Khan)
Director (Response)

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(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 20

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

Tel: 021-99261417

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TC- Alert 20 (Warning # 7 for Southeast Sindh)

Date: 14 June 2023

Time: 1430 PST

Very Severe Cyclonic Storm (BIPARJOY) over Northeast Arabian Sea

The Very Severe Cyclonic Storm (VSCS) “BIPARJOY” over northeast Arabian Sea moved north-northeastward during last 06 hours, and now lies near Latitude 21.7°N & Longitude 66.4°E at a distance of about 370km south-southwest of Karachi, 355km south- southwest Thatta and 290km south- southwest of Keti Bandar. Maximum sustained surface winds are 150-160 Km/hour gusts 180 Km/hour around the system center and sea conditions being phenomenal around the system center with maximum wave height 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.

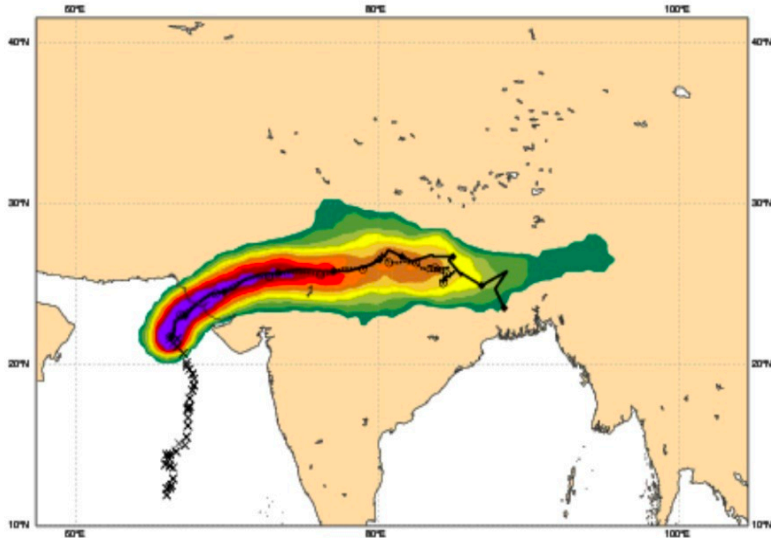
Under the existing upper-level steering winds, the VSCS “BIPARJOY” started to recurve North-northeastward and likely cross between Keti Bandar (Southeast Sindh) and Indian Gujarat coast on 15 June evening as a **Very Severe Cyclonic Storm (VSCS)** with packing winds of 100-120 Km/hour gusting 140 km/hour. 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 80-100Km/hour gusting 120km/hour likely in Thatta, Sujawal, Badin, Tharparker, Mirpurkhas & Umerkot districts during 14-17 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 from 14 -16 June.
- Dust/thunderstorm-rain with isolated heavy falls likely in Hub, Lasbella districts of Balochistan during 14-16 June.
- Squally (high intensity) winds may cause damage to loose & vulnerable structures (Kutcha houses) including solar panels etc.
- Storm surge of 3-3.5 meters (8-12 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

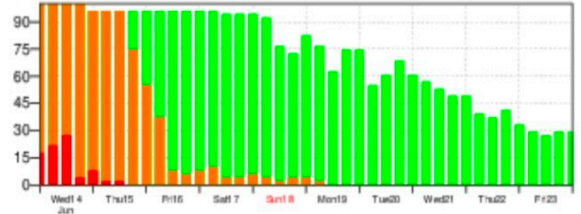
Date 20230614 00 UTC @ECMWF
 Probability that **BIPARJOY** will pass within 120 km radius during the next 240 hours
 tracks: **solid**=HRES; **dot**=Ens Mean [reported minimum central pressure (hPa) **951**]



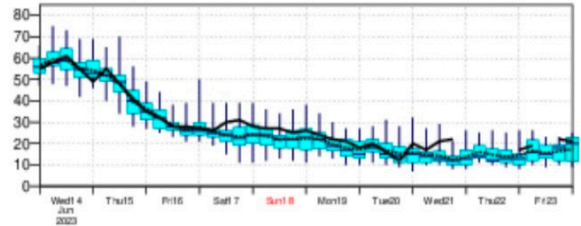
List of ensemble members numbers forecast Tropical Cyclone
 Intensity category in colours: **TD**[up to 33] **TS**[34-63] **HR1**[64-82] **HR2**[83-95] **HR3**[> 95 kt]

+024 h	fr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22	23	25	26	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	fr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22	23	25	26	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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+096 h	fr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22	23	25	26	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	fr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
+216 h	fr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
+240 h	fr	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

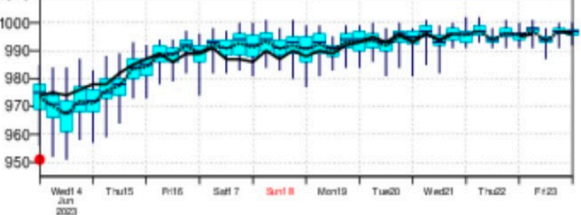
Probability (%) of Tropical Cyclone Intensity falling in each category
TD[up to 33] **TS** [34-63] **HR1**[64-82] **HR2** [83-95] **HR3** [> 95 kt]



10m Wind Speed (kt) **solid**=HRES; **dot**=Ens Mean



Mean Sea Level Pressure in Tropical Cyclone Centre (hPa) **solid**=HRES; **dot**=Ens Mean



Forecasted Path – Tropical Cyclone “BIPARJOY”

