

Prelim Bits 23-12-2023 | UPSC Daily Current Affairs

JN.1 variant

India recently reported a case of JN.1 from Kerala, as part of routine surveillance and genome sequencing by INSACOG.

INSACOG is an Indian SARS-CoV-2 Genomics Consortium, a network of genomic laboratories.

- **JN.1** - It is a ***descendant of the Pirola variant (BA.2.86)***, which itself ***stems from the Omicron sub-variant***.
- It carries ***mutations in the spike protein*** that may increase its infectivity and ability to evade immune responses.

*The lineages are assigned by an international network called **PANGO**. The Pango nomenclature is being used to track the transmission and spread of SARS-CoV-2, including variants of concern.*

- **Continued growth of JN.1** - It is *either more transmissible* or better at evading our immune systems.
- **Symptoms** - Like other variants, it causes *fever, shortness of breath, runny nose, sore throat, cough, fatigue* etc.

The B.1.1.529 lineage (Omicron) was the last lineage designated as a Variant of Concern (VOC) by World Health Organisation (WHO).

- **Treatment** - According to Union Health Ministry, the *existing line of treatment* for Covid-19 is expected to be effective against this variant as well.
- Doctors advise *targeted vaccination* for individuals who may have a compromised immunity system and the elderly, if required.

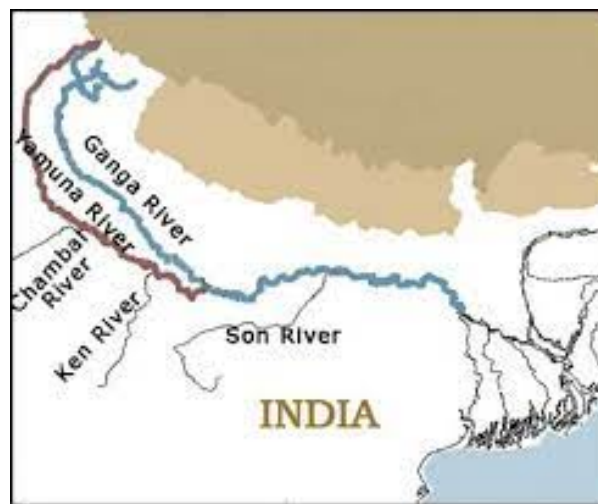
References

1. [The Hindu Business Line| JN.1 variant in India](#)
2. [The New Indian Express| sub-lineages of Omicron](#)

Sone River

Bihar police have arrested smugglers and seized sand-laden boats in a major crackdown against illegal sand mining near the Sone River.

- It is also known as the Son River.
- It is a *principal southern tributary of the Ganges (Ganga) River*, rising in Madhya Pradesh state, central India.
- The river cuts through the Kaimur Range and joins the Ganges above Patna.
- The Son valley is geologically almost a continuation of that of the Narmada River to the southwest.
- The valley is bordered by the Kaimur Range to the north and the Chota Nagpur plateau to the south.
- At Dehri, in Bihar state, are the headworks of the Son canal system.



References

1. [Down To Earth - Illegal sand mining in Sone River](#)
2. [Britannica - Sone River](#)

Indian Ocean Naval Symposium (Ions) - 2023

The 8th edition of Indian Ocean Naval Symposium (IONS) Conclave of Chiefs (CoC) was conducted by Royal Thai Navy at Bangkok, Thailand.

- The inaugural edition of IONS was held in Feb 2008 at New Delhi, with the Indian Navy as the Chair for two years.
- IONS is a voluntary initiative that seeks to increase maritime co-operation among navies of the littoral states (states with coast) of the Indian Ocean Region.
- IONS provides an open and inclusive forum for discussion of regionally relevant maritime issues.

As a first, Flag designed by India was selected as the IONS Flag.

- The members have been geographically grouped into the following four sub-regions:

- **South Asian Littorals** - Bangladesh, India, Maldives, Pakistan, Seychelles, Sri Lanka and United Kingdom (British Indian Ocean Territory).
- **South East Asian and Australian Littorals** - Australia, Indonesia, Malaysia, Myanmar, Singapore, Thailand and Timor-Leste.
- **East African Littorals** - France (Reunion), Kenya, Mauritius, Mozambique, South Africa, and Tanzania.
- **West Asian Littorals** - Iran, Oman, Saudi Arabia and United Arab Emirates.
- India also took over as the co-Chair of IONS Working Groups on Maritime Security.
- Republic of Korea Navy was welcomed by the Conclave as the latest 'Observer', raising the collective strength of IONS to 34 (25 Members & 09 Observers).

India is also scheduled to take over as the Chair of IONS (2025-27) during 9th CoC planned to be conducted in India in end 2025.

References

1. [PIB - Indian Ocean Naval Symposium \(IONS\), 2023](#)
2. [IONS - About IONS](#)

Variant of Interest and Other Types

Recently WHO declared JN.1, a sub-variant of COVID-19 as variant of interest.

- When usual virus change and become significantly different to a previously detected virus form, this new virus types is known as variant.

Variant is a viral genome (genetic code) that may contain one or more mutations.

- **Classification of variants** -
 1. Variants Under Monitoring (VUM)
 2. Variant of Interest (VOI)
 3. Variant of Concern (VOC)
 4. Variant of High Consequences (VOHCs)

Variant of Interest (VOI)

- It is used to describe a SARS-CoV-2 variant with changes that are known to affect how the virus behaves.
- **Procedure** - WHO is required to review global epidemiology, monitor and track global spread, facilitate the sharing of virus isolates via WHO Bio-hub.
- WHO also coordinates laboratory investigations with Member States and partners if needed.
- **Indication of VOI** - It indicates that the country has to keep a close eye on three things:
 1. Genomic surveillance
 2. How a VOI spreads

3. Variant's clinical behaviour

Variants Under Monitoring (VUM) is a term used to signal public health authorities that a SARS-CoV-2 variant may require prioritized attention and monitoring.

Variant of Concern (VOC)

- The VOC associates it with more severe disease or increased transmissibility.
- **Eligibility** - The variant has to have at least one of the following characteristics to be classified as a VOC:
 1. Detrimental change in clinical disease severity.
 2. Change in COVID-19 epidemiology causing a substantial impact on the ability of health systems.
 3. Significant decrease in the effectiveness of available vaccines in protecting against severe disease.

WHO has identified four variants of concern namely Alpha, Beta, Gamma and Delta.

Variant of High Consequences (VOHCs)

- If the variant has clear evidence that prevention, measures or medical countermeasures (MCMs) have significantly reduced effectiveness relative to previously circulating variant.

No SARS-CoV-2 variants have been classified as VOHCs.

References

1. [WHO - Variants of SARS-COV-2](#)
2. [Down To Earth - JN1 sub variant of COVID](#)

Flooding in Peninsular Rivers

As per recent study, peninsular river basins in India are more likely to face widespread flooding than transboundary rivers.

Aspects	Peninsular Rivers	Transboundary Rivers
About	It originates and flow within the Indian subcontinent, mainly in the peninsular region.	They are the rivers that crosses one or more international boundaries such as the Indus, the Ganga, and the Brahmaputra.
Place of origin	Peninsular plateau and central highland.	Himalayan mountain covered with glaciers.

Nature of flow	They are mainly rain-fed and <i>non-perennial</i> as it is dependent on monsoon rainfall and dry up during the summer season.	<i>Perennial</i> as it receives water from glacier and rainfall.
Nature of river	Smaller, fixed course with well-adjusted valleys.	Long course, flowing through the rugged mountains experiencing headward erosion
Catchment areas	It is relatively smaller basin than transboundary rivers.	Very large basins.
Age of the river	Old rivers and have less water flow than transboundary rivers.	Young and youthful, they have more water flow than peninsular river.
Characteristics	They have reached their base level and have gentle slopes, broad valleys, and shallow channels. They form deltas at their mouth where they deposit their sediments.	They are still in the process of reaching their base level and have steep slopes, narrow valleys and deep channels. They form estuaries at their mouth where they meet the sea water.

About the study

- **Peninsular rivers** - The **Narmada basin** has the *highest probability* (59%) of widespread flooding, followed by Mahanadi, Godavari, Krishna and Cauvery.
- Godavari, Mahanadi and Narmada basins recorded widespread flooding in July, August and September as they lie in *core monsoon region*.
- **Cauvery** - It faces flooding in October-December, as most of the river's sub basins receive rainfall during the *northeast monsoon season*.
- **Transboundary Rivers** - Ganga and Brahmaputra have a probability of 21% and 18%, respectively.
- **Brahmaputra river basin** - It experienced widespread floods during June-July as the northeast region receives rainfall earlier compared to north Indian states.
- **Seasonal trends** - The study revealed that the most widespread floods occur during the summer monsoon, except for Cauvery.
- The widespread floods are associated with large atmospheric circulation that cause precipitation in the river basin.
- **Climate change** - The study highlighted the need to understand the occurrence and drivers of widespread floods in the Indian subcontinent, as they are expected to alter in a warming climate.
- **Impact** - Widespread floods cause enormous losses and damages compared to localised flooding.

Reference

[Down To Earth- Flooding in Peninsular rivers](#)



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