Prelim Bits 24-01-2023 | UPSC Daily Current Affairs

Ocean Heat Content

For the fourth year in a row, the world's oceans recorded extreme heating in 2022 on account of anthropological activities.

- Ocean Heat Content (OHC) is the amount of energy absorbed by and stored in the oceans.
- OHC is measured in joules, the unit of energy.
- When sunlight reaches the earth, oceans absorb this energy and store it as heat.
- While the heat is first absorbed at the surface of the water body, some of it is eventually disbursed throughout.
- Water also has a higher heat capacity than air, which means that water heats up slower than air and can store much larger amounts of heat.

More than 90% of the excess heat accumulated in the earth's climate is deposited in the oceans.

- **Climate change and OHC** - OHC is an important indicator of climate change.
- An increase in greenhouse gas emissions traps more energy from the sun in the atmosphere.
- Rising ocean temperatures strengthen the exchange of energy from oceans to the atmosphere by increasing the evaporation of water and thus the quantity of atmospheric moisture.
- This leads to changes in global precipitation patterns as well as temperatures.
- Stratification and salinity-contrast index, along with OHC, are important elements in quantifying climate change.
- **Stratification -** Vertical stratification happens when there is change in the density of water due to temperature and salinity changes in oceans.
- This stratification hinders water mixing and consequently the exchange of heat, carbon, oxygen and so on between layers.
- **Salinity-contrast Index** - Defined as the difference between the salinity averaged over climatologically high-salinity and low-salinity regions.
- Salinity-contrast index, an indicator of a change in the water cycle, reached its highest level on record in 2022.
- Salinity determines water density, which drives the circulation of water in oceans.

References

1. The Hindu - World's oceans warmest on record in 2022: Study

BharOS

BharOS, the indigenous mobile operating system wants to cater to the approximately 100 crore mobile phone users in India.

- BharOS is an indigenous mobile operating system (OS), like Android or iOS.
- It is developed by JandK Operations Private Limited, a non-profit organization incubated at IIT Madras and funded by the Department of Science and Technology.
- BharOS is meant to be a contribution towards the idea of 'Atmanirbhar Bharat' by creating a secure OS environment for India-based users.

Features of BharOS

- BharOS appears to be more specialised with greater focus on app customisation and is still in limited use at the moment.
- BharOS is an AOSP (Android Open Source Project) based operating system with no Google apps or services.
- BharOS would offer Native Over The Air (NOTA) updates and No Default Apps (NDA) setting.
- This features a minimalistic home screen with the Indian flag, a list of app categories, and selected apps which had passed the OS' trust and security standards.
- BharOS will use Private App Store Services (PASS) system, which will examine and curate the apps that are safe for the users.
- These systems help smartphone users interact with their device and access its features, while ensuring safety.
- **Present status** - The current version of BharOS comes with third-party apps like DuckDuckGo and Signal as default browsers and messaging apps.
- The OS can be installed on commercial off-the-shelf handsets.
- It will be collaborated with smartphone manufacturers in the future to launch cell phones with BharOS.

NOTA updates - security updates and bug fixes will be automatically installed rather than users having to check for updates and implementing them on their own
NDA setting - users do not have to keep or use pre-installed apps in this mobile operating system.

References

1. The Hindu - What is BharOS software?
2. IE - BharOS: India's Android rival

INS Vagir

The Indian Navy commissioned the fifth diesel-electric Kalvari-class submarine Vagir.

> *The latest submarine, Vagir, gets its name from the erstwhile Vagir submarine, which served the Navy between 1973 and 2001 and undertook numerous*

operational missions.

- Vagir is the fifth of the Kalvari-class submarine.
- The submarines in the current Kalvari-class take their names from erstwhile decommissioned classes of submarines named Kalvari.
- Vagir was launched into water on November 12, 2020 and commenced sea trials on February 1, 2022.
- Vagir is named after Vagir Sand shark, a predatory marine species.
- The submarine can launch marine commandos for special operations and has a state of the art torpedo decoy system.
- **Kalvari class** - They are 6 Scorpene submarines built under the Project 75.
- These submarines are built by the Mazagon Dock Shipbuilders Limited (MDL) in collaboration with the French Naval Group.
- These submarines are conventional submarines propelled by diesel-electric engines.
- They feature advanced Air Independent Propulsion (AIP) systems to enable them to stay submerged for longer duration and substantially increase their operational range.
- The Kalvari class of submarines are capable of launching various types of torpedoes and missiles.
- They are equipped with a range of surveillance and intelligence-gathering mechanisms.
- The submarine can undertake anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying, and surveillance missions.

With the latest induction of INS Vagir, India now has 16 conventional submarines (Kalvari class, Sindhughosh class, Shishumar class) and a nuclear submarine, INS Arihant.

Project-75

Name	Meaning	Commissioned Year
INS Kalvari	Tiger Shark	2017
INS Khanderi	Island Fort built by Chhatrapati Shivaji	2019
INS Karanj	Island located South of Mumbai	2021
INS Vela		2021
INS Vagir	Sand Fish	2023
INS Vagsheer	Sand Fish	Launched in 2022 (under trails)

References

1. The Hindu - INS Vagir commissioned into the Indian Navy
2. IE - INS Vagir commissioned into the Indian Navy

Norovirus

Norovirus infection has been confirmed in two schoolchildren in Ernakulam, Kerala.

- Norovirus is also called as '***winter vomiting bug***' which causes vomiting and diarrhoea.
- Norovirus is also known as *'stomach flu'*, but unrelated to the flu.

  Flu is caused by the influenza virus.

- **Infection** - Contaminated water or food is the usual infective agent.
- The virus spreads through the faecal-oral route.
- Eating or drinking contaminated food or liquids, touching contaminated surfaces or objects, or having direct contact with someone who is infected.
- **Symptoms** - Causes stomach or intestine inflammation, known as acute gastroenteritis.
- Symptoms also include diarrhoea, vomiting, nausea and stomach ache. Fever, headache and body pain can also persist
- Symptoms usually appear 12 to 48 hours after being exposed to the virus.
- **Effect** - Norovirus can cause dehydration, especially in children, the elderly, and people suffering from other illnesses.
- **Severity** - Norovirus outbreaks are rarely serious, it can spread fast if proper precautions are not taken.
- **Treatment** - There is no particular medication to treat norovirus illness.
- **Recovery** - Most people recover from norovirus illness within one to three days.

References

1. The Hindu - Norovirus infection reported in 2 children in Kerala
2. NDTV - What Is Norovirus And How It Spreads?

Subhash Chandra Bose Aapda Prabandhan Puraskar

The Centre has announced the annual Subhash Chandra Bose Aapda Prabandhan Puraskar 2023 for disaster management.

- The Centre instituted the annual award, Subhash Chandra Bose Aapda Prabandhan Puraskar on the 125th birth anniversary of Netaji Subhash Chandra Bose.
- The Puraskar recognises and honours the contribution and service rendered by individuals and organisations in India in the field of disaster management.
- The award is announced every year on 23rd January, the birth anniversary of Netaji Subhash Chandra Bose.
- The award carries a cash prize and a certificate.

Institution	Rs 51 lakh and a certificate
Individual	Rs 5 lakh and a certificate

- The Subhash Chandra Bose Aapda Prabandhan Puraskar 2023 for their work in

disaster management is awarded to
    1. The Odisha State Disaster Management Authority (OSDMA).
    2. The Lunglei Fire Station (LFS), Mizoram.
- Lunglei Fire Station responded efficiently and effectively to a massive forest fire which was reported on 24 April 2021 in the uninhabited forest areas.

Odisha State Disaster Management Authority (OSDMA)

- ODSMA was established in 1999 in the aftermath of the Super Cyclone.
- Initiatives of OSDMA
    1. Odisha Disaster Response Action Force (ODRAF).
    2. Multi-hazard Early Warning Service (MHEWS) framework.
    3. SATARK platform (System for Assessing, Tracking, and Alerting Disaster Risk Information based on Dynamic Risk Knowledge)

References

1. PIB - Subhash Chandra Bose Aapda Prabandhan Puraskar-2023
2. IE - Subhash Chandra Bose Aapda Prabandhan Puraskar for 2023
3. NDMA - Subhash Chandra Bose Aapda Prabandhan Puraskar