

WHAT IS A COLD WAVE, WHY NORTHWEST INDIA IS SHIVERING

Why in News?

- Delhi and other parts of northwest India have been reeling under a cold wave spell that set in last week.
- In Delhi, the Safdarjung weather station has recorded cold wave conditions for five consecutive days so far this month, making it the longest such spell in a decade.

What is a Cold Wave?

- The **Indian Meteorological Department (IMD)** marks a cold wave in terms of minimum temperatures –
 - When the **minimum temperature in the plains is 4 degrees or less** or
 - When the **minimum temperature is less than 10 degrees and 4.5 to 6.4 degrees below the normal.**

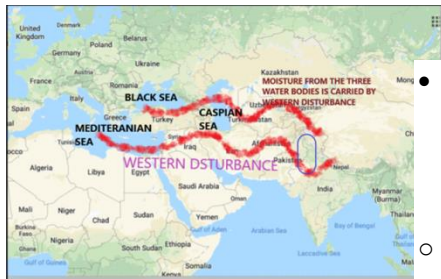
What are the Factors Contributing to Cold Wave in Northwest India?

- One of the major factors contributing to colder than normal temperatures over north India this month is the **large-scale fog cover.**
- Fog has been lasting for longer durations, preventing sunlight from reaching the surface and affecting the radiation balance.
- There is no heating in the day time, and then there is the impact of the night.
- Foggy or cloudy nights are usually associated with warmer nights, but if the fog remains for two or three days, cooling begins even at night.

Why is Delhi Colder than Himachal Pradesh and Uttarakhand?

- Delhi is reeling under an intense cold wave that has gripped northern India.
- The long cold wave spell in Delhi can be attributed to a **large gap between two western disturbances** which allowed the chilly north-westerly winds from the mountains to affect the plains for a longer-than-usual period.
 - Mostly there is a gap of three to four days between two western disturbances but this time the period expanded to seven days.

What is Western Disturbance and how does it affect Weather in India?



- In simple terms, a Western Disturbance (WD) is an extra-tropical storm which originates in the **Mediterranean region**, the meaning of WD lies in its name.
- In the term “extra-tropical storm”, storm refers to low pressure.
- “Extra-tropical” means outside the tropics. As the WD originates outside the tropical region, the word “extra-tropical” has been associated with them.
- The disturbance travels from the “western” to the eastern direction.
- Disturbance means an area of “disturbed” or reduced air pressure. Equilibrium exists in nature due to which the air in a region tries to normalise its pressure.
- **Impact on India –**
 - A WD is associated with rainfall, snowfall and fog in northern India during winters.
 - Upon its arrival in Pakistan and northern India, clouds along with rain also arrive.
 - It is very **useful for wheat and other Rabi crops**.

What is Indian Meteorological Department (IMD)?

- India Meteorological Department was established in **1875**.
- It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology and allied subjects.
- **Concerned Ministry:** Ministry of Earth Sciences
- **Headquarters:** New Delhi

Functions of IMD:

- To take meteorological observations and to provide current and forecast meteorological information for optimum operation of weather-sensitive activities like agriculture, irrigation, shipping, aviation, offshore oil explorations, etc.
- To warn against severe weather phenomena like tropical cyclones, norwesters, dust storms, heavy rains and snow, cold and heat waves, etc., which cause destruction of life and property.

- To provide meteorological statistics required for agriculture, water resource management, industries, oil exploration and other nation-building activities.

WORLD SPICE CONGRESS 2023

Recently, the Secretary to the Spices Board of India said that World Spice Congress 2023 will be held in Mumbai from 16-18 February 2023.



About World Spice Congress:

- It was planned and conceived in 1990 as a forum for discussion and interaction between the importers and exporters of spices.
- Since its inception it has been Organized under the leadership of the Spices Board, Ministry of Commerce and Industry, Government of India.

What are the key facts about the World Spice Congress (WSC) 2023?

- What is the **Theme?**: **VISION 2030: S-P-I-C-E-S** (Sustainability, Productivity, Innovation, Collaboration, Excellence and Safety).
- Policymakers, regulatory authorities, spice trade associations, government officials as well as technical experts from key G20 countries will participate in the event.
- **Maharashtra** has been chosen as a venue because
- It is one of the leading states producing spices. It is the **largest producer** of **turmeric** in India. Maharashtra produces two GI-tagged turmeric varieties and one GI-tagged chilli variety. Coastal areas of Maharashtra are also known for the production of GI-tagged **Kokum**.

What is the Spices Board of India?

- Spices Board was constituted on 26th February 1987 under **the Spices Board Act 1986** with the merger of the erstwhile Cardamom Board (1968) and Spices Export Promotion Council (1960).
- It is functioning under the **Ministry of Commerce & Industry**.
- It is responsible for the export promotion of the 52 scheduled spices and the development of Cardamom (Small & Large).

- **Main Functions**

- Research, Development and Regulation of domestic marketing of Small & Large Cardamom
 - Post-harvest improvement of all spices
 - Promotion of organic production, processing and certification of spices
 - Development of spices in the North East
 - Provision of quality evaluation services
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OZONE HOLE IS FILLING UP

Why in News?

- According to the **Scientific Assessment of Ozone Depletion 2022**, an UN-backed scientific panel report, the ozone hole, which was once believed to be the most serious threat to planetary life, is now expected to be totally repaired by 2066.

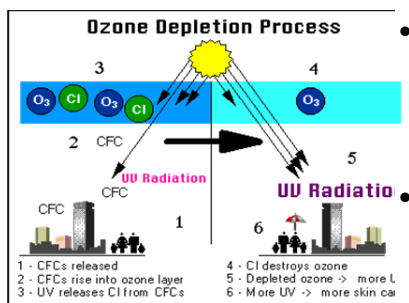
What exactly is the ozone layer, and how crucial is it to life on Earth?

- **Ozone** is a naturally occurring molecule and an ozone molecule is made up of 3 oxygen atoms (chemical formula - **O₃**).
- The ozone layer is the common term for the high concentration of ozone that is found in the **stratosphere** around 15-30 km above the earth's surface.
- **The Dobson Unit (DU)** is the most common unit for measuring ozone concentration (1 DU = no. of molecules of O₃ required to create 0.01 millimeters thick ozone layer at 0 degrees Celsius and 1 atm pressure).
- It covers the entire planet and **protects life on earth by absorbing harmful ultraviolet-B (UV-B) radiation** from the sun.
- **The long-term UV-B radiation exposure** causes skin cancer, genetic damage, and immune system suppression in humans and animals, as well as lower yielding agricultural crops.

What is the ozone hole?

- Chemicals containing **chlorine and bromine** atoms are released to the atmosphere through human activities.

- These chemicals combine with certain weather conditions to cause reactions in the ozone layer, leading to **ozone molecules being destroyed**.
- Depletion of the ozone layer occurs globally, however, the severe **depletion of the ozone layer** over the Antarctic is often referred to as the **ozone hole**.
- This is linked to the unique **meteorological conditions** (temperature, pressure, wind speed) that prevail over Antarctica. Increased depletion has recently started occurring over the Arctic as well.



What is the timeline of efforts taken to repair the ozone hole?

- 1974: Chemists in the USA discover the link between chlorofluorocarbons (CFCs) and the breakdown of ozone in the stratosphere.
- 1985: British scientists publish results of abnormally low ozone concentrations above the Antarctic.
- 1985: **Vienna Convention** for the Protection of the Ozone Layer agreed.
- 1987: **Montreal Protocol** on Substances that Deplete the Ozone Layer agreed. It sets binding obligations for countries to phase out production of all the major ozone depleting substances.
- **2016: The Kigali Amendment to the Montreal Protocol** seeks to eliminate 80-90% of the hydrofluorocarbons (HFCs) currently in use by the year 2050, which is expected to prevent another 0.3 to 0.5 degree Celsius of global warming by the turn of the century.

DEFENCE ACQUISITION COUNCIL (DAC)

Recently, DAC gave nod to purchase indigenous defence systems amounting to Rs. 4,276 crore. These include helicopter-launched Nag missiles and BrahMos cruise missile launchers for ships



About:

- **What is it?** The DAC is the **highest decision-making body** of the defence Ministry on procurement.

- **Chairman:** The **defence minister is the chairman of DAC**. Its members include Chief of Defence Staff (CDS) and chiefs of Army, Navy and Air Force.
- **Objective:** The main objective of the DAC is to ensure expeditious procurement of the approved requirements of the armed forces.
- **Formation:** It was formed, after the Group of Ministers recommendations on 'Reforming the National Security System', in 2001, post Kargil War (1999).

Functions of DAC includes

- **Give in principle approval** of a 15 years Long Term Integrated Perspective Plan (LTIPP) for defence forces.
- **Accord of acceptance** of necessity to acquisition proposals.
- **Categorisation of the acquisition proposals** relating to 'Buy', 'Buy & Make' and 'Make'.
- **Look into issues** relating to single vendor clearance.
- **Take decisions regarding 'offset' provisions** in respect of acquisition proposals **above Rs 300 crore**.
- **Take decisions regarding Transfer of Technology** under the 'Buy & Make' category of acquisition proposals.
- **Field trial evaluatio**

VILLAGE DEFENCE GUARDS SCHEME (VDGS)

Recently, Government started the process of arming members of VDGS with assault rifles in Jammu region and CRPF to provide arms training to VDGS in the wake of recent terror attacks in the region.



About:

- The aim of VDGS is to **organize a small group of volunteer armed civilians** in the identified **villages along the borders** as well as in-depth areas of the **Jammu division**, with a view to instill a sense of self-protection and ensure safety and security of such villages.

- VDGs shall be charged with the **responsibility of protecting community installations and infrastructural facilities** within the defined areas of their village.

Key facts about VDGs:

- **The Village Defence Committees (VDCs)** were set up in the 1990s to **arm villagers for self-defense purposes in the J&K region.**
- In 2020, the policy of Village Defence Committees was revamped and Village Defence Groups were introduced, members of whom are called Village Defence Guards (VDGs).
- Based on assessment by law enforcement agencies, a group of armed civilians belonging to the ‘more vulnerable areas’ **not more than 15 in number in each group**, who shall be designated as VDGs shall be formed.
- Each group will be called the ‘**Village Defence Group**’ and shall be **headed by a retired officer of the Army/Central Para Military Force (CPMF)/J&K Police.**
- All VDGs are **eligible for a monthly remuneration.**
- The VDGs also function under the supervision of **district superintendent of police (SP) / Senior superintendent of police (SSP).**

WHAT IS PRITHVI-II MISSILE?

Recently, the Defence Research and Development Organisation (DRDO), successfully carried out a training launch of, Prithvi-II from the Integrated Test Range, Chandipur off Odisha.



About Prithvi-II missile:

- It is a **surface-to-surface**, nuclear-capable short-range ballistic missile.
- It has a carrying 500-1,000 kilograms of warheads and is powered by **liquid propulsion** twin engines.
- **Range:** It has a strike range of **350 km.**

- The missile is a proven system and is capable of striking targets with a very high degree of precision.
 - The state-of-the-art missile uses an advanced inertial guidance system with manoeuvring trajectory to hit its target.
 - It was **inducted** into the Indian armed forces in
 - It was one of the first missiles developed under the Government of India's IGMDP.
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THE STALEMATE BETWEEN TELANGANA AND AP

Why in news?

- Recently, the Supreme Court sought a response from the Centre on a petition filed by the Andhra Pradesh government seeking a fair, equitable and expeditious division of assets and liabilities with Telangana.

What is the issue between Andhra Pradesh and Telangana?

- More than eight years after the bifurcation of the erstwhile united Andhra Pradesh, **division of assets and liabilities between the two States remain elusive.**
 - In February 2014, Andhra Pradesh Reorganisation bill, 2014 was passed by the Parliament of India.
 - This bill paved the way for the formation of Telangana state comprising ten districts from north-western Andhra Pradesh.
- Both the States make their own interpretation of the provisions under the Andhra Pradesh Reorganisation Act 2014.
- Several bilateral meetings between the two States as well as those convened by the Union Home Ministry failed.
- The Andhra Pradesh government has now approached the Supreme Court seeking just, reasonable and equitable apportionment of assets and liabilities.

What are AP government's claims?

- The AP Government is firm on the implementation of the recommendations given by the expert committee headed by retired bureaucrat Sheela Bhide.
- The committee has recommended for bifurcation of 89 out of the 91 Schedule IX institutions.
- It lamented that the Telangana government had selectively accepted the recommendations leaving others.
- This was resulting in delays in division of assets and liabilities.

What is the stand of Telangana?

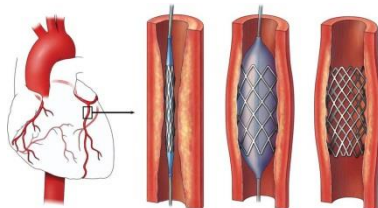
- The Telangana government has contended that the expert committee's recommendations were against the interests of Telangana.
- The recommendations on the division of assets that are not a part of the headquarter assets attracted criticism from the Telangana government.
- Telangana claims that there is a clear definition of division of headquarter assets in Section 53 of the Reorganisation Act.
- The government is firm that the assets located outside the erstwhile united State like Andhra Pradesh Bhavan in New Delhi could be divided between the States on the basis of population as per the provisions of the Act.

What is the role of the Centre?

- The Act empowers the Union Government to intervene as and when needed.
- So far, several meetings of the dispute resolution committee headed by the Union Home Secretary and comprising of the Chief Secretaries of the two States could not break the impasse.

WHAT IS A CORONARY STENT?

Recently, Delhi High Court asked the Central government to respond to a plea seeking sale and marketing of coronary stents in the country only after submission of adequate supporting clinical studies



About:

- **What is a Stent?** A stent is a **tiny, expandable metal mesh coil**. It is put into the newly opened area of the artery to **help keep the artery from narrowing or closing again**.
- This revascularization procedure is termed as a **percutaneous coronary intervention (PCI)** or coronary angioplasty with stent placement.
- Coronary stents are now **used in nearly all angioplasty procedures**.
- Most stents are coated with medicine to prevent scar tissue from forming inside the stent. These stents are called **drug-eluting stents (DES)**.
- Compared to coronary artery bypass surgery, which is much more invasive, people who get **stents have less discomfort and a shorter recovery time**.

Angioplasty:

- It is a **procedure used to open blocked coronary arteries** caused by coronary artery disease.
- It **restores blood flow to the heart muscle** without open-heart surgery.
- Angioplasty can be done in an emergency setting such as a heart attack. Or it can be done as elective surgery if your healthcare provider strongly suspects you have heart disease.
- Performed with local anesthesia and mild sedation, angioplasty involves no major incisions and usually takes about an hour.