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## Current Affairs - 10 January 2025

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### Z-MORH TUNNEL



- It is a 2-lane road tunnel between Gagangir and Sonamarg on the Srinagar-Leh Highway in Jammu and Kashmir.

- The name “Z-Morh” refers to the Z-shaped road section near the construction site.

#### Why was the tunnel needed?

- The area where the tunnel is being constructed sits at **an altitude of over 8,500 ft** and is prone to snow avalanches, which make the **road to Sonamarg impassable during most parts of the winter.**

#### Features:

- **Length: 6.5 km**
- The tunnel is designed for the flow of **1,000 vehicles an hour** at an approved maximum speed of 80 km per hour.
- **No toll tax** will be collected from vehicles using the tunnel.
- In addition to the main tunnel, it includes a **parallel 426 km long Escape Tunnel** and a 0.6 km long **Ventilation Tunnel.**
- **Intelligent Traffic Management System** has been installed in Z-Morh Tunnel which will make it easier to control traffic. Along with this, traffic will be facilitated through the dedicated escape tunnel.

#### Strategic Importance:

- In addition to providing all-weather access to Sonamarg, the tunnel is **vital for ensuring year-round connectivity to Ladakh.** This is particularly important for the **movement of military personnel** to border areas.
- Along with the 14.15 km **Zojila Tunnel to its east**, it aims to enhance the **Indian military’s capabilities in Kashmir and Ladakh** along both the Line of Control (LOC) to the north and the Line of Actual Control (LAC) further east.



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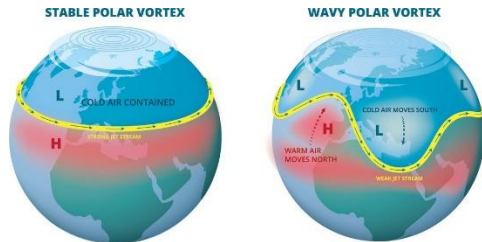
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### WHAT IS THE POLAR VORTEX?



The plunging polar vortex brought subfreezing temperatures to some of the southernmost points of the United States recently.

- It is a large area of low pressure and cold air surrounding both of the Earth's poles.
- It extends from the tropopause (the dividing line between the stratosphere and troposphere) through the stratosphere and into the mesosphere.
- It always exists near the poles, but weakens in summer and strengthens in winter.
- The term "vortex" refers to the counter-clockwise flow of air that helps keep the colder air near the Poles.
- Many times, during winter in the northern hemisphere, the polar vortex expands, sending cold air southward with the jet stream.
- Jet streams are relatively narrow bands of strong wind in the upper levels of the atmosphere, typically occurring around 30,000 feet (9,100 meters) in elevation.
- It occurs fairly regularly during wintertime and is often associated with large outbreaks of Arctic air in the United States. It is not confined to the United States. Portions of Europe and Asia also experience cold surges connected to the polar vortex.
- By itself, the only danger to humans is the magnitude of how cold temperatures will get when the polar vortex expands, sending Arctic air southward into areas that are not typically that cold.
- The Antarctic polar-front jet stream is more uniform and constant than its Arctic counterpart, because Antarctica is surrounded by ocean rather than a mix of land and water.
- Cold-air outbreaks, however, do occur in the Southern Hemisphere, but they are less frequent and strike heavily populated areas less frequently.



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### WHAT IS THE INTERNATIONAL ORGANIZATION FOR MIGRATION (IOM)?



The UN International Organization for Migration said it was more than doubling an appeal launched last month for Syria, from \$30 million to \$73.2 million.

- Established in 1951, IOM is the **leading intergovernmental organization in the field of migration** and works closely with governmental, intergovernmental and non-governmental partners.
- IOM is **part of the United Nations system** as a **related organization**. It is the **coordinator for the Secretary of the UN Network on Migration**.
- IOM works to **help ensure the orderly and humane management of migration**, to promote international cooperation on migration issues, to **assist in the search for practical solutions to migration problems** and to provide **humanitarian assistance to migrants in need**, including refugees and internally displaced people.
- The IOM is the **UN agency in charge of labour mobility and migration** in general.
- Its labour mobility and human development division is responsible for providing policy and operational guidance in matters related to labour mobility, diaspora communities and their links to development and migrant integration.
- It supported the negotiation and adoption of the **UN Global Compact for Migration**, a UN global agreement for international migration adopted in 2018.

**Headquarters:** Geneva, Switzerland.

**Member States:** IOM has **175 member states** and 8 observer states.

**Publications:** World Migration Report, Migration Health Annual Report.

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### ANJI KHAD BRIDGE



Indian Railways continues to showcase its engineering excellence with the newly completed Anji Khad Bridge, the country's first cable-stayed rail bridge.

- It is **India's first cable-stayed rail bridge**, located in the **Reasi district of Jammu and Kashmir**.
- A **critical component** of the ambitious **Udhampur-Srinagar-Baramulla Rail Link (USBRL)** Project, this engineering marvel **connects Katra and Reasi**.
- The project's prime focus is on **enhancing connectivity between the Kashmir Valley and the rest of India**.
- It is constructed over the **Anji River, a tributary of the Chenab River**.
- Constructed in the challenging Himalayan terrain, the bridge overcame complex geological conditions, including seismic activity and fragile rock formations.
- The **Indian Railways collaborated with IIT Roorkee and IIT Delhi** for **site-specific investigations** to ensure the bridge's stability.

#### **Features:**

- It is an **asymmetrical cable-stayed bridge balanced on the axis of a central pylon**.
- Spanning **725.5 metres**, the bridge features a **193-metre-tall main pylon**, soaring **331 metres** above the riverbed.
- Its design allows it to withstand wind speed of up to **213 km/h** and safely support train operations at the speed of **100 km/h**.
- The bridge comprises **four key sections**: a **120-metre approach viaduct** on the Reasi side, a **38-metre approach bridge** on the Katra side, a **473.25-metre cable-stayed segment** spanning the valley and a **94.25-metre central embankment** connecting the main structure to the viaduct.



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### MIYAWAKI TECHNIQUE



Around 56,000 sq. meters of Dense Forests created in Prayagraj in last two years using Miyawaki Technique in preparation for Mahakumbh 2025.

- It was developed by renowned Japanese botanist Akira Miyawaki in the 1970s.
- It is a revolutionary method for creating **dense forests in limited spaces**.
- It is often referred to as the '**pot plantation method**', it involves planting trees and shrubs close to one another to accelerate their growth. Plants grow 10 times faster with this technique, making it a practical solution for urban areas.
- This method mimics natural forests by using a **mix of native species** planted densely.

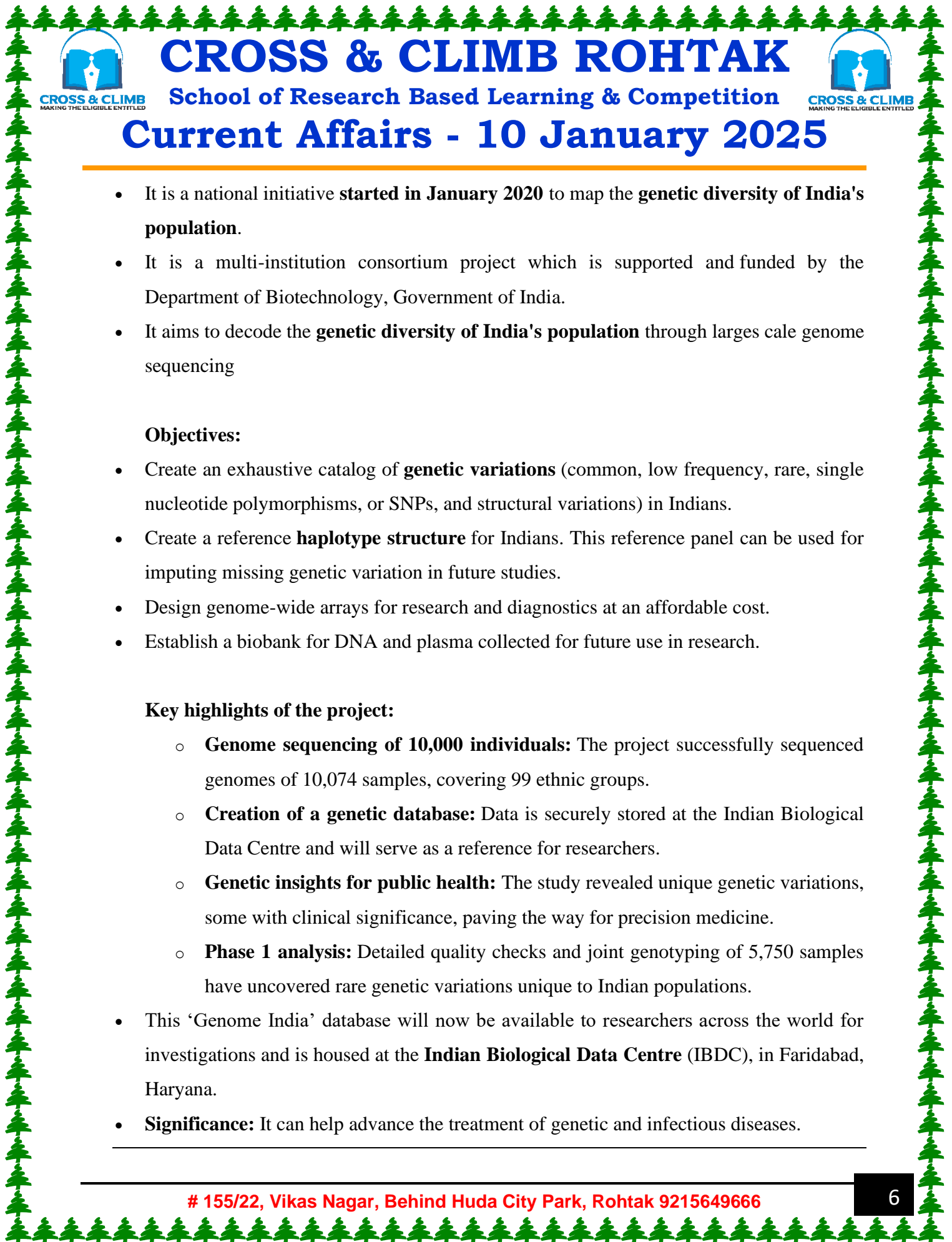
#### **Advantages:**

- It improves soil quality, enhances biodiversity, and accelerates forest development.
  - Trees planted using the Miyawaki technique **absorb more carbon, grow faster,** and support richer biodiversity compared to traditional forests.
  - In urban settings, this technique has transformed polluted, barren lands into green ecosystems.
  - It has successfully managed industrial waste, reduced dust and foul odours, and curbed air and water pollution.
  - Additionally, it **prevents soil erosion and promotes ecological balance,** making it an effective tool for environmental restoration.
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GENOME INDIA PROJECT





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- It is a national initiative **started in January 2020** to map the **genetic diversity of India's population**.
- It is a multi-institution consortium project which is supported and funded by the Department of Biotechnology, Government of India.
- It aims to decode the **genetic diversity of India's population** through large scale genome sequencing

### Objectives:

- Create an exhaustive catalog of **genetic variations** (common, low frequency, rare, single nucleotide polymorphisms, or SNPs, and structural variations) in Indians.
- Create a reference **haplotype structure** for Indians. This reference panel can be used for imputing missing genetic variation in future studies.
- Design genome-wide arrays for research and diagnostics at an affordable cost.
- Establish a biobank for DNA and plasma collected for future use in research.

### Key highlights of the project:

- **Genome sequencing of 10,000 individuals:** The project successfully sequenced genomes of 10,074 samples, covering 99 ethnic groups.
  - **Creation of a genetic database:** Data is securely stored at the Indian Biological Data Centre and will serve as a reference for researchers.
  - **Genetic insights for public health:** The study revealed unique genetic variations, some with clinical significance, paving the way for precision medicine.
  - **Phase 1 analysis:** Detailed quality checks and joint genotyping of 5,750 samples have uncovered rare genetic variations unique to Indian populations.
  - This 'Genome India' database will now be available to researchers across the world for investigations and is housed at the **Indian Biological Data Centre (IBDC)**, in Faridabad, Haryana.
  - **Significance:** It can help advance the treatment of genetic and infectious diseases.
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### HENLEY PASSPORT INDEX 2025



- It is the original, authoritative ranking of all the world's passports according to the **number of destinations** their holders can access **without a prior visa**. It started in 2006 as the Henley & Partners Visa Restrictions Index (HVRI).
- The index is based on exclusive data from the **International Air Transport Association (IATA)**, the largest, most accurate travel information database. It is enhanced by **Henley & Partners'** research team.
  - Henley & Partners is a London-based advisory firm.
- The index includes **199 different passports and 227** different travel destinations.
- The number of countries that a specific passport can access becomes its visa-free 'score'.

### **Highlights of Henley Passport Index 2025:**

- **Singapore** has continued to dominate the list of the world's strongest passports, achieving a top rank in 2025 as well. A person with a Singapore passport can travel visa-free to 195 destinations across the world.
- As per its latest standing, an **Indian passport holder** can travel visa-free to **57 destinations**. The country shares its rank with Equatorial Guinea and Niger.
- The EU member states of France, Germany, Italy and Spain all drop two places to share third position. They are joined by Finland and South Korea, with all six passports granting visa-free access in 2025 to 192 destinations.
- Fourth place is equally competitive, with seven EU nations—Austria, Denmark, Ireland, Luxembourg, the Netherlands, Norway, and Sweden—each providing visa-free access to 191 destinations.
- Completing the top five are Belgium, Portugal, Switzerland, the UK, and New Zealand—the only non-European country in this group—all offering visa-free travel to 190 destinations.



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### GADDI DOG



The Indian Council of Agricultural Research- National Bureau of Animal Genetic Resources (ICAR-NBAGR) has recognised the Gaddi as a registered indigenous dog breed from the Himalayas.

- The breed is named after the **Gaddi shepherds of Himachal Pradesh** and has been used by them to guard their flocks of sheep and goats from predators.
- Its ability to fight and fend off carnivores such as the Snow Leopard has also earned it the nickname of the '**Indian Panther Hound**' or '**Indian leopard Hound**'.
- The breed is mainly found in the Himalayan region.
- It is the **fourth indigenous canine** after **Rajapalayam** and **Chippiparai** of Tamil Nadu and **Mudhol Hound of Karnataka** to be accorded the status.

#### Appearance;

- They are predominately **black with occasional white marking** on the feet, tail, or trunk region.
- One of their main attributes is their massive, arched neck that protects them from predators.
- These dogs have harmonious build, medium stature, moderately long, robust muscular body,

**Main benefit of Recognition:** It will help in maintaining purity of this breed that is much in demand and conducive to the Himalayan region.

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### 18<sup>th</sup> PRAVASI BHARATIYA DIVAS

The **theme** for this year was the “**Diaspora’s contribution to a Viksit Bharat**”.

**What is Pravasi Bharatiya Diwas (PBD)?**





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- It is observed on January 9 to strengthen the engagement of the Indian community overseas with the India government and reconnect them with their roots.
  - January 9 was chosen as the day to celebrate PBD as it was on this day, in 1915, that Mahatma Gandhi had returned to India from South Africa.
- It also marks the contribution of the Indians living abroad in the development of the land of their ancestors.
- PBD conventions were being held every year since 2003.
- Since 2015, its format has been revised. PBD is now celebrated once in every two years.
- **Pravasi Bharatiya Samman Award**
  - During the Convention, Pravasi Bharatiya Samman Award (PBSA) is conferred on the selected overseas Indians.
  - This award is given for the significant contributions by overseas Indians to various fields both in India and abroad.
    - It is the highest honour conferred on a Non-Resident Indian, Person of Indian Origin; or an organisation or institution established and run by Non-Resident Indians or Persons of Indian Origin.
  - PBSA is conferred by the President of India.

### Indian Diaspora: Key Statistics and Influence

- **Population:**
    - USA: 54 lakh
    - UAE: 35 lakh
    - Canada: 28 lakh
    - Saudi Arabia: 24 lakh
  - **Economic Contribution:** The diaspora remitted \$125 billion to India in 2023.
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