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**DAILY CURRENT AFFAIRS 15-01-2025**

**GS-1**

1. Z-Morh Tunnel
2. Sudan

**GS-2**

3. The Arunachal Pradesh Freedom Of Religion Act 1978

**GS-3**

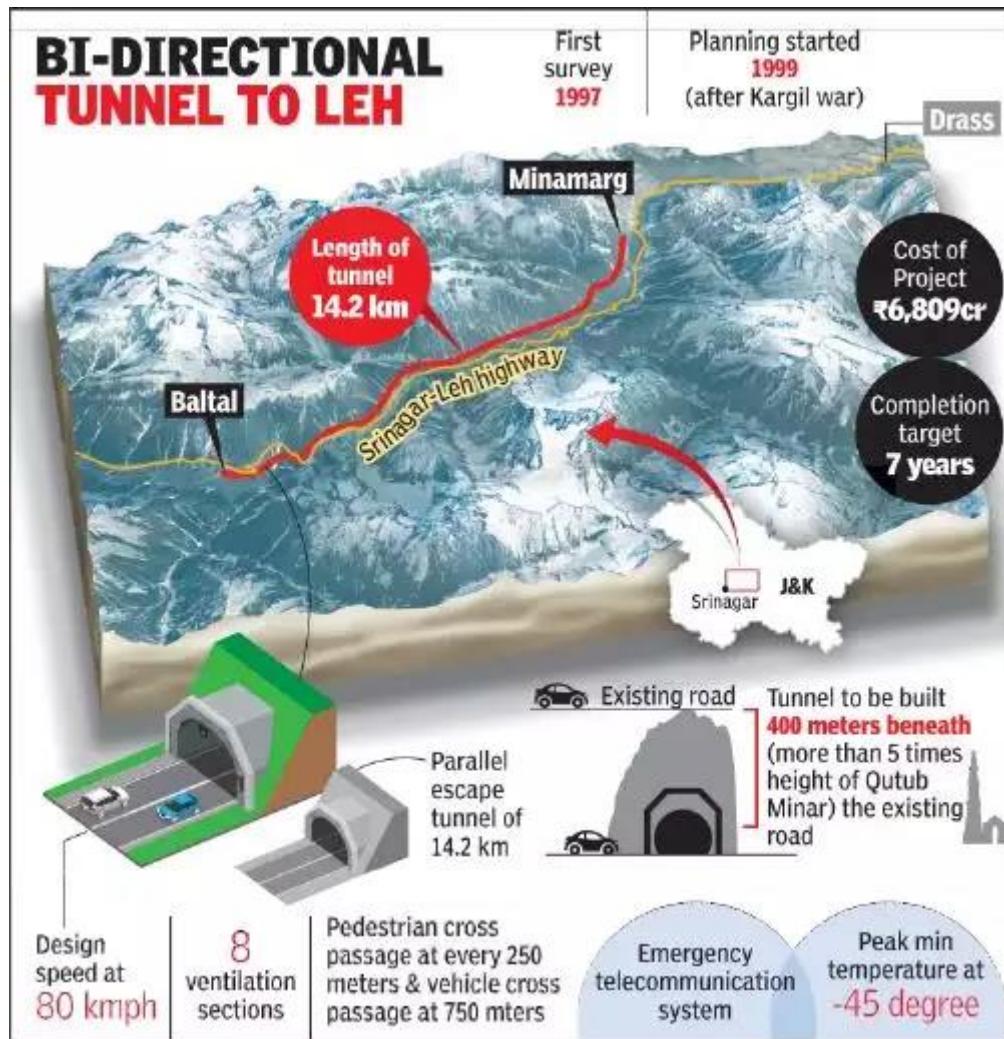
4. Ebola
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## Z-Morh Tunnel

**Syllabus: GS-1; Geography**

### Context

- The highly anticipated Z-Morh tunnel, a critical infrastructure project inaugurated on January 13 2025, is set to revolutionise connectivity and stimulate economic growth in **Sonamarg**.



### About

- The **Z-Morh Tunnel** is a significant infrastructure project located in the **Ganderbal district** of Jammu and Kashmir.

- It forms a part of the strategic corridor connecting **Kashmir to Ladakh**, with the goal of ensuring **year-round connectivity** between these two regions, which are often affected by harsh weather conditions, particularly during the winter months.

### Key Features:

- **Location:** Ganderbal district, Central Kashmir.
- **Length:** 6.5 km.
- **Cost:** Rs 2,680 crore.
- **Tunnel Type:** Two-lane tunnel.
- **Key Infrastructure:**
  - A **7.5-meter horseshoe-shaped escape tunnel**.
  - An **intelligent traffic management system** to streamline vehicle flow.
  - **Culverts** of varying lengths for structural efficiency.

### Strategic Significance:

- **Tourism:** The Z-Morh Tunnel ensures **year-round accessibility** to **Sonamarg**, a popular tourist destination that was previously cut off during heavy snowfall and avalanches in winter. This makes Sonamarg a reliable destination for **winter tourism** and promotes the development of other **adventure tourism** spots in the region.
- **Safety:** The tunnel bypasses landslide and avalanche-prone areas, making travel **safer and more reliable**.
- **Economic Growth:** Local businesses, especially the **hospitality sector**, view the tunnel as a transformative development, helping to boost **economic growth** by attracting more visitors to the region.

### Security Challenges:

- The Z-Morh tunnel project has faced security challenges, with a **militant attack** in October 2022 at the construction site, resulting in the loss of seven workers.
- In response, security has been significantly strengthened, and additional checkpoints are in place to ensure safety during the inauguration.

### Link to Zojila Tunnel:

- The Z-Morh Tunnel is part of a larger initiative that includes the **Zojila Tunnel**, which is considered to be **Asia's longest under-construction tunnel** (13.14 km). The **Zojila Tunnel** will further enhance connectivity between **Ganderbal** and **Kargil** by cutting travel time from **three hours to just 20 minutes**. It is expected to

improve **strategic defense logistics** and provide uninterrupted access to **Ladakh**, even in winter when the **Zojila Pass** is closed.

### **Technological Innovations:**

- The **Z-Morh Tunnel** incorporates advanced technologies such as the **intelligent traffic management system** for better vehicle movement and the **culverts** for structural stability.
- The tunnel's construction aims to withstand harsh environmental and geological challenges, given its location under the **Thajiwas Glacier** and through **avalanche-prone regions**.

### **Strategic and Military Importance:**

- The project has been deemed critical for **national security**, particularly for the movement of defense personnel and material to **Ladakh**, a strategically significant region.
- The tunnel ensures **seamless connectivity** in all weather conditions, which is crucial for both military logistics and **civilian transport**.

## **Sudan**

### **Syllabus: GS-1; Geography-Mapping, GS-2; Geo-Politics**

#### **Context**

1. United Nations says more than 3 million Sudan children facing acute malnutrition
2. Genocide is declared once more in Sudan.

#### **Geography**

- **Location:** Sudan is located in North-East Africa, bordered by Egypt to the north, the Red Sea and Eritrea to the east, Ethiopia to the southeast, South Sudan to the south, the Central African Republic to the southwest, Chad to the west, and Libya to the northwest.
- **Capital:** Khartoum, which lies at the confluence of the Blue Nile and White Nile rivers.
- **Area:** Approximately 1.86 million square kilometers, making it the third-largest country in Africa.

- **Topography:** It consists of deserts (the Sahara Desert in the north), plains, and the Nile River which flows through the country, creating fertile lands in the central and southern regions.



## History

- Sudan has a long history, with the Kingdom of Kush being one of the notable ancient civilizations in the region.
- **Colonial Period:** Sudan was jointly administered by the British and Egyptians from 1899 until it gained independence in 1956.
- **Civil Wars:** Sudan faced two long civil wars (1955-1972, 1983-2005) mainly between the north (Arab, Muslim) and the south (African, Christian/animist). This eventually led to the secession of South Sudan in 2011.

## Political Structure

- **Government:** Sudan is a republic with a transitional government formed after the 2019 overthrow of President Omar al-Bashir, who had ruled for 30 years. The country has faced political instability since his removal, with competing factions vying for power.

- **Recent Developments:** The Sudanese military and civilian leaders signed a framework agreement in 2021, but there have been ongoing clashes between the military and civilian groups.
- **South Sudan Split:** The 2011 secession of South Sudan was a significant development, which created the world's newest country and exacerbated Sudan's economic challenges.

### Economy

- **Natural Resources:** Sudan is rich in natural resources like oil, gold, and agricultural products, but the loss of oil revenue after the secession of South Sudan significantly impacted the economy.
- **Agriculture:** Sudan's economy is heavily dependent on agriculture, including crops like sorghum, millet, wheat, and cotton, as well as livestock.
- **Challenges:** Sudan faces inflation, high unemployment, food insecurity, and external debt issues. The economy has been further strained by conflicts, sanctions, and the loss of oil fields.

### Society and Culture

- **Ethnic Diversity:** Sudan is ethnically diverse, with Arabs being the dominant group in the north and various African groups in the south and west.
- **Religion:** Islam is the dominant religion, with a small minority of Christians and indigenous religious communities.
- **Languages:** Arabic is the official language, and many indigenous languages are spoken.
- **Human Development:** Sudan faces challenges in education, healthcare, and human rights, particularly in the context of displacement due to conflict.

## The Arunachal Pradesh Freedom Of Religion Act 1978

### Syllabus: GS-2: Acts and Policies

#### Context:

- The Arunachal Pradesh Freedom of Religion Act of 1978, which has remained dormant for decades, has recently garnered attention due to legal and socio-political developments.

- Introduced to address concerns over forceful religious conversions in a culturally diverse state, the Act is now poised for revival, raising questions about its implications on religious freedom and cultural preservation.

## Key Features of the Act

- **Purpose:**
  - Prohibits forced religious conversions through force, fraud, or inducement.
  - Aims to protect indigenous faiths and traditions.
- **Definitions:**
  - *Conversion:* Renouncing one religion to adopt another.
  - *Indigenous Faiths:* Traditional beliefs, including Buddhism, Vaishnavism, and nature worship.
  - *Force, Fraud, Inducement:* Encompasses threats, misrepresentation, and material incentives.
- **Prohibitions and Penalties:**
  - Conversion through force, fraud, or inducement is banned.
  - Penalties: Imprisonment up to 2 years and fines up to ₹10,000.
- **Mandatory Reporting:**
  - Conversion ceremonies must be reported to district authorities.
  - Non-compliance leads to imprisonment up to 1 year or a fine of ₹1,000.
- **Legal Provisions:**
  - Offenses are cognizable and require prior sanction for prosecution.

## Historical and Current Context

- **History:**
  - Enacted in 1978 to preserve tribal cultures and traditions.
  - Faced opposition from Christian groups and regional assemblies like Nagaland's.
  - Lacked implementation due to the absence of rules and political resistance.
- **Current Revival:**

- A 2022 PIL in the Gauhati High Court demanded rule formulation, resulting in court directives to finalize drafts by 2023.

## Cultural and Political Implications

➤ **Cultural Motivations:**

- Aims to counter rapid conversions impacting indigenous practices.
- High conversion rates in districts have raised preservation concerns.

➤ **Political Dynamics:**

- The BJP-led state government and RSS affiliates are emphasizing the protection of indigenous faiths.
- Resistance from Christian groups citing discrimination and potential misuse.

## Challenges and Way Forward

➤ **Challenges:**

- Balancing religious freedom with cultural preservation.
- Addressing allegations of discrimination and misuse.
- Managing growing Christian demographics (30.26% by 2011 census).

➤ **Way Forward:**

- Transparent implementation avoiding misuse.
- Inclusive dialogue among stakeholders to mitigate tensions.
- Legal safeguards to protect both individual rights and cultural heritage.

## Conclusion

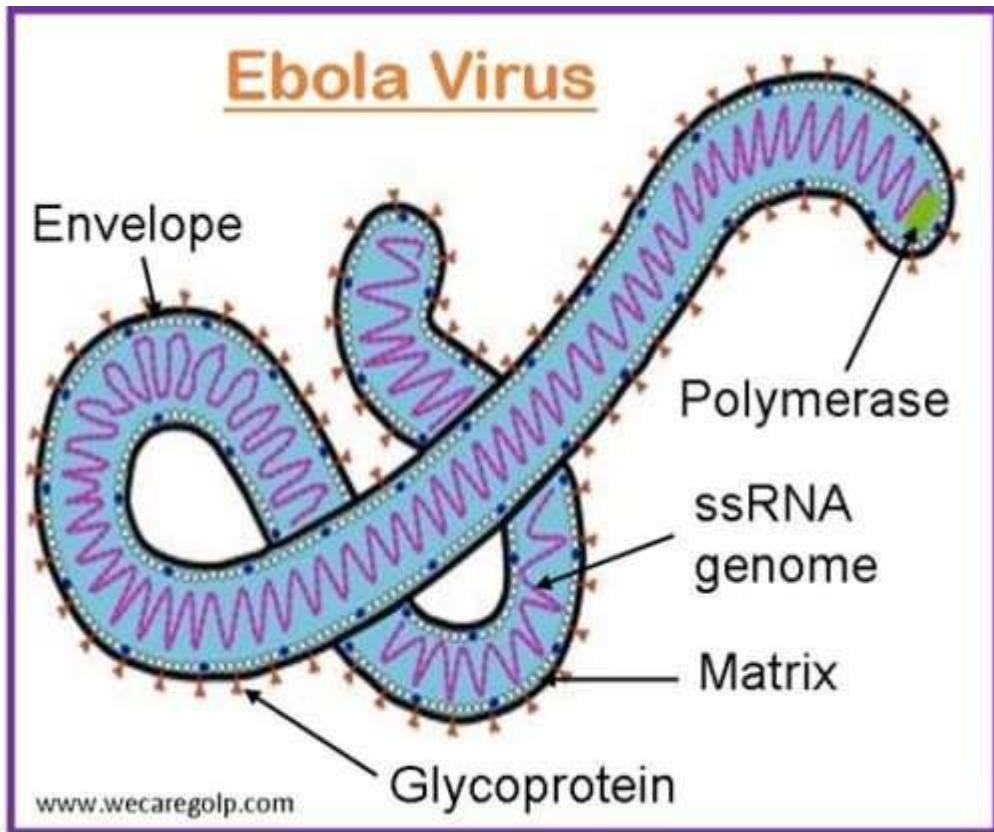
The revival of the Arunachal Pradesh Freedom of Religion Act reflects the interplay between cultural preservation and religious freedom. While it aims to protect indigenous practices, its implementation must ensure that it does not infringe upon constitutional rights or exacerbate communal divides.

## Ebola

**Syllabus: GS-3; Science & Tech**

### **Context**

- Researchers develop nanobody inhibitors to target Ebola virus.



### **About**

- Ebola virus belongs to the family **Filoviridae** and causes **Ebola Virus Disease (EVD)**.
- It was first identified in 1976 near the **Ebola River** in the **Democratic Republic of Congo** (then Zaire), hence the name.
- There are five species of the Ebola virus:
  - Zaire (most virulent)
  - Sudan
  - Tai Forest
  - Bundibugyo
  - Reston (not known to cause disease in humans)

### **Transmission:**

- Ebola is transmitted through direct contact with bodily fluids (blood, vomit, urine, sweat, semen) of infected individuals.
- It can also spread via contaminated surfaces or objects.
- Animal hosts, including fruit bats and primates, can carry the virus and are believed to be the source of human outbreaks.

## Symptoms:

- Initial symptoms include fever, headache, joint and muscle aches, weakness, diarrhea, vomiting, and unexplained hemorrhaging (bleeding from gums, eyes, nose, etc.).
- In severe cases, it leads to organ failure, shock, and death.

## Recent Developments in Treatment: Nanobodies for Ebola:

- Researchers at the University of Minnesota and the Midwest Antiviral Drug Discovery (AViDD) Center have developed the first nanobody-based inhibitors targeting the Ebola virus.
- **Nanobodies** are tiny antibodies derived from animals like alpacas. Their small size allows them to access areas of the virus and human tissues that larger antibodies cannot.
- During the COVID-19 pandemic, the team created nine nanobodies to fight COVID-19. Now, they've used this technology to develop two new nanobody inhibitors for Ebola: **Nanosota-EB1** and **Nanosota-EB2**.

## Prevention and Control:

- There is **no specific antiviral treatment** for Ebola, but supportive care (hydration, pain relief, and treatment of symptoms) is crucial.
- **A vaccine, Ervebo**, has been approved for use in some countries, providing protection against the Zaire strain of the virus.

## Global Outbreaks:

- The largest and most widespread outbreak occurred between 2014 and 2016 in West Africa, primarily affecting Guinea, Liberia, and Sierra Leone, resulting in thousands of deaths.
- Other outbreaks have occurred in Central Africa, with periodic flare-ups.
- WHO and various international health organizations closely monitor and respond to outbreaks.

### **Link with Sustainable Development Goals (SDGs):**

- The Ebola crisis highlights the importance of **Goal 3** (Good Health and Well-being) and **Goal 17** (Partnerships for the Goals) in terms of international cooperation, strengthening healthcare systems, and addressing public health emergencies.

## **Genome India Project**

**Syllabus: GS-3: Science and Technology – Biotechnology – Genetics.**

### **Context:**

- Prime Minister Narendra Modi on Thursday lauded the completion of the ambitious Genome India Project, calling it a "historic step in the world of research."

### **Genome India Project:**

#### **Background**

- **Launch:** January 2020, funded by the Department of Biotechnology.
- **Objective:** Decode the genetic diversity of India's population through large-scale genome sequencing.
- **Completion:** Project completed in 2024 despite challenges posed by COVID-19.

#### **Achievements**

- **Genome Sequencing:**
  - Sequencing of **10,074 genomes** across **99 ethnic groups**.
  - Data securely stored at the **Indian Biological Data Centre**.
- **Database Creation:**
  - Establishment of a comprehensive **genetic database** for researchers.
- **Insights for Public Health:**
  - Discovery of **unique genetic variations**, including some with clinical significance.
  - Potential for **precision medicine** and **targeted clinical interventions**.
- **Sample Collection:**

- Collection of **19,000 blood samples**, exceeding the initial target.
- Samples stored at the **GenomeIndia Biobank** for future research.

➤ **Phase 1 Analysis:**

- Detailed quality checks and joint genotyping of **5,750 samples**.
- Identification of **rare genetic variations** unique to Indian populations.

## Significance

➤ **Biotechnology Revolution:**

- A milestone in advancing **biotechnology** and creating a **diverse genetic resource**.

➤ **Public Health Benefits:**

- Enhanced understanding of India's genetic landscape to address **health challenges**.
- Development of **precision medicine** tailored to Indian populations.

➤ **Economic Impact:**

- Growth of India's **bioeconomy** from \$10 billion (2014) to **\$150 billion** today.
- Strengthened India's position as a **global pharma hub**.

➤ **Global Role:**

- India's contribution to solving **global health problems** through genomic insights.

## Quote by PM Narendra Modi

➤ **Historic Step:** "Genome India Project is an important milestone in the world of research."

➤ **Global Impact:** "The world is looking to India for solutions to global problems."