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19th February, 2024

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S.NO.	TOPIC
1.	IPCC'S ASSESSMENT REPORTS
2.	PRELIMS POINTERS

IPCC'S ASSESSMENT REPORTS

SOURCE: [THE HINDU](#)

TAG: GS Paper III- *Causes of Pollution & Degradation, Prevention & Control of Pollution & Degradation, International Environment Agencies & Agreements.*

PRACTICE QUESTIONS

Mains

Q. Discuss the role and challenges faced by the Intergovernmental Panel on Climate Change (IPCC) in providing scientific assessments of climate change.

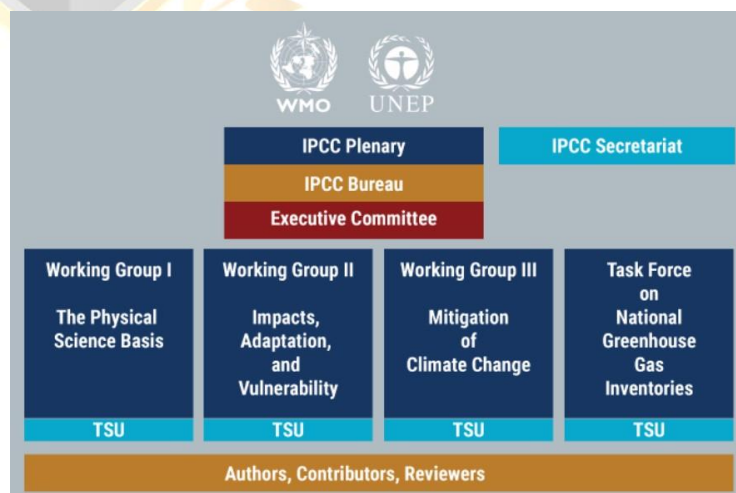
(150 words)

WHY IN NEWS?

- ❖ *The recent IPCC report underscores the urgent need to address climate change as it warns of nearing **adaptation limits and advocates for strategies to mitigate warming.** Additionally, the initiation of the **seventh assessment cycle (AR7) by the IPCC** further highlights global efforts to understand and combat the challenges posed by climate change.*

ABOUT IPCC:

- ❖ The Intergovernmental Panel on Climate Change (IPCC) was established in **1988** by the **World Meteorological Organization (WMO)** and **United Nations Environment Programme (UNEP)**.
- ❖ Its primary purpose is to **assess the science related to climate change, providing policymakers with regular assessments of the scientific basis, impacts, future risks, and options for adaptation and mitigation.**
- ❖ IPCC assessments inform the development of climate-related policies at all levels of government and are integral to negotiations at the **UN Climate Conference (UNFCCC)**.
- ❖ While IPCC assessments are policy-relevant, they are **not policy-prescriptive**, offering projections of future climate change scenarios, risks, and implications of response options without dictating specific actions for policymakers.
- ❖ The IPCC operates as a **scientific and intergovernmental body**, with participation open to **all 195 member countries of the WMO and United Nations.**
- ❖ **Decision-making** within the IPCC is conducted through **Plenary Sessions**, where representatives of member states gather to make major decisions.





- ❖ The **IPCC Bureau**, elected by member governments, provides guidance on scientific and technical aspects of the IPCC's work and advises on management and strategic issues.

RECENT IPCC REPORTS:

- ❖ Since 1988, the UN Intergovernmental Panel on Climate Change (IPCC) has produced numerous **assessment reports, special reports, and methodology reports.**
- ❖ The Sixth Assessment Report (AR6), completed in 2021-2022, focuses on the **science, consequences, adaptation, vulnerability, and mitigation aspects of climate change.**
- ❖ AR6 emphasizes the urgency of **limiting global warming to 1.5 degrees Celsius as agreed in the Paris Agreement**, highlighting the nearing of adaptation limits.

INITIATION OF AR7 CYCLE:

- ❖ After AR6, the IPCC began its seventh assessment cycle (AR7) with the election of a **new IPCC bureau.**
- ❖ The bureau convened for the first time in **Turkey in January 2024** to discuss **budgeting, report timelines, and work programs.**
- ❖ The AR7 cycle will produce **full assessment and synthesis reports, methodology reports, and a special report on climate change and cities.**
- ❖ Methodology reports will cover **short-lived climate forcers and carbon removal.**
- ❖ Technical guidelines on impacts and adaptation will be revised.

GLOBAL STOCKTAKE:

- ❖ The **Global Stocktake** is a recurring assessment mechanism established under the **Paris Agreement in 2015.**
- ❖ It occurs **every five years**, with the inaugural stocktake concluded at the **UN Climate Change Conference (COP28)** in 2023.
- ❖ The main objectives of the stocktake are to evaluate individual countries' efforts in reducing Greenhouse Gas (GHG) emissions and transitioning to renewable energy sources.
- ❖ Although countries have outlined their **Nationally Determined Contributions (NDCs)**, they are **encouraged, but not obligated**, to elevate their ambitions every five years.
- ❖ Decision 19/CMA.1 emphasizes that the **global stocktake is a Party-driven process conducted transparently and with the participation of non-Party stakeholders.**
- ❖ It allows countries and stakeholders to evaluate **collective progress towards meeting the goals of the Paris Agreement** and identify areas needing improvement.
- ❖ Comparable to taking inventory, the **global stocktake** involves reviewing all aspects of climate action and support, identifying gaps, and collaboratively determining solutions for the future

ROLE FOR IPCC:

The Intergovernmental Panel on Climate Change (IPCC) plays a crucial role in providing policymakers and other stakeholders with a comprehensive and objective assessment of the scientific, technical, and socio-economic information related to climate change. The IPCC's role includes:

- ❖ Critically **assessing the scientific literature** to understand the physical science basis of climate change, its impacts, and options for adaptation and mitigation.
- ❖ **Producing reports that undergo a rigorous, open, and transparent review process**, ensuring the robustness of their findings.
- ❖ **Providing policymakers with the latest scientific knowledge** to inform international climate agreements, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.
- ❖ Facilitating **the integration of climate change knowledge across disciplines** through the collaboration of three Working Groups: WGI (Physical Science Basis), WGII (Impacts, Adaptation, and Vulnerability), and WGIII (Mitigation of Climate Change).



- ❖ **Enhancing traceability and reproducibility of report figures** and tables by providing detailed input data and links to archived code.
- ❖ **Adopting and promoting the FAIR (Findable, Accessible, Interoperable, and Reusable) principles** to improve the transparency and reproducibility of their digital products, such as the Atlas repository for the Sixth Assessment Report (AR6).

CHALLENGES FACED BY THE IPCC:

The Intergovernmental Panel on Climate Change (IPCC) faces several challenges, including:

- ❖ **Author Selection and Bureau Membership:**
 - ☛ Criticism has been raised about the nomination and selection process for authors and Bureau members, suggesting a need for more transparency and objectivity in these processes to ensure comprehensive, unbiased, and open assessments.
- ❖ **Oversight and Governance:**
 - ☛ The IPCC's oversight mechanisms have been questioned, with some arguing that they are not adequate to ensure the unimpeachable nature of the IPCC's operations.
- ❖ **Comprehensiveness and Objectivity:**
 - ☛ The IPCC has been accused of blind spots, bias, and a lack of openness and transparency, which has led to calls for procedural reforms to address these concerns.
- ❖ **Review Process:**
 - ☛ The IPCC's review process has been scrutinized, with some case studies highlighting potential issues with drafts and reviews.
- ❖ **Misunderstanding of the Assessment Process:**
 - ☛ There is a widespread misunderstanding about the IPCC assessment process, which is often considered more formal and rigorous than it actually is, leading to a need for better communication and education about the process.
- ❖ **Adaptation and Mitigation Challenges:**
 - ☛ The IPCC's reports assess the impacts of climate change and the options for adaptation and mitigation, but the implementation of these strategies involves complex challenges that require cooperation among governments, the private sector, and civil society.
- ❖ **Land-Use and Biodiversity Loss:**
 - ☛ The IPCC's reports have highlighted the challenges associated with land-use sectors, such as farming and forestry, which contribute to the rapid loss of natural ecosystems and biodiversity, and call for better land management decisions to address climate change.

CONCLUSION:

- ❖ *In conclusion, despite facing challenges, the IPCC remains crucial for providing policymakers with climate change assessments. Collaboration and improvements in transparency and governance can enhance its effectiveness in guiding global climate action.*



PRELIMS POINTERS:

19th February, 2024

TOPIC

CANCER FIGHTING T-CELLS FOR MULTIPLE MYELOMA

DESCRIPTION

WHY IN NEWS?

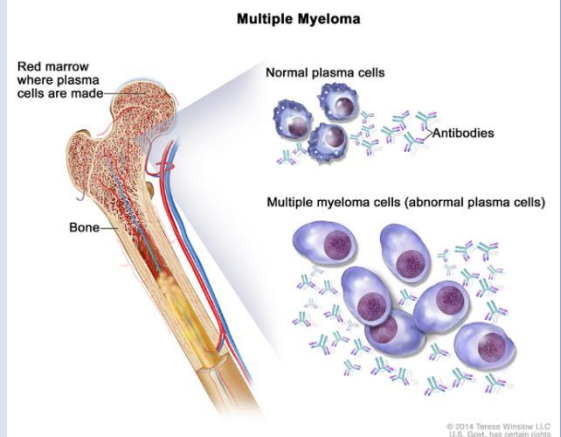
- ❖ Scientists have developed a new variant of **cancer-fighting T cells** targeting **multiple myeloma tumors in mice.**

INTRODUCTION:

- ❖ Scientists pioneer groundbreaking cancer treatment targeting **multiple myeloma.**
- ❖ **Cancer-fighting T cells** offer significant therapeutic potential.
- ❖ Engineered T cells surpass conventional CAR T cell designs.

MULTIPLE MYELOMA

- ❖ **Myeloma**, or multiple myeloma, is a **cancer of plasma cells, which produce antibodies.**
- ❖ It results in excessive plasma cell growth, crowding out **normal cells in the bone marrow.**
- ❖ Multiple myeloma is the most common type, originating in the bone marrow and potentially spreading.
- ❖ **Symptoms** include bone pain, fractures, fever, infections, bruising, weakness, and fatigue.
- ❖ Age, gender (more common in men), race (more common in Black individuals), and radiation exposure are **risk factors.**



HIGH RISK PREGNANCIES IN INDIA ON THE RISE

WHY IN NEWS?

- ❖ A recent study by the **ICMR's National Institute for Research in Reproductive and Child Health IRRCH** analysing data from **nearly 24,000 pregnant women in India** highlights the **high prevalence of high-risk pregnancies in India.**

KEY FINDINGS OF THE STUDY:

- ❖ **High-risk pregnancy** prevalence: **49.4%.**
- ❖ Higher proportion of multiple high risks among women with **no education (22.5%) compared to educated women.**
- ❖ 33% had a **single high-risk factor**, while 16% had **multiple factors.**
- ❖ Highest in **Meghalaya (67.8%), Manipur (66.7%), Mizoram (62.5%), and Telangana (60.3%).**
- ❖ Lowest in **Sikkim (33.3%), Odisha (37.3%), and Chhattisgarh (38.1%).**

STUDY METHOD:

- ❖ Used data from the **National Family Health Survey-5 (2019-2021).**
- ❖ Extracted data from **28,400 currently pregnant women aged 15-49 years.**
- ❖ Analysed **23,853 pregnant women.**

In recent years, the number of high-risk pregnancies have gone up, almost by

15-20%

TYPICAL AGE OF WOMEN WHO FALL UNDER HIGH RISK OF PREGNANCIES ARE 30-38 years

Causes:

- Hypertension leading to pre-eclampsia
- Diabetes causing gestational diabetes
- Recurrent pregnancy loss
- Late pregnancy
- Assisted reproductive therapy
- Obesity
- Nutritional deficiency
- Autoimmune disease
- Placental problems



GSLV ROCKET NICKNAMED 'NAUGHTY BOY'

RISK FACTORS:

- ❖ **Leading factors: short birth spacing**, adverse birth outcomes, recent caesarean section.
- ❖ **Maternal risk factors:** adolescent or advanced maternal age, short stature, high BMI.
- ❖ **Gestational weight gain: Overweight (7-11 kg), obese (5-9 kg).**
- ❖ **Lifestyle:** tobacco use, alcohol consumption.
- ❖ **Previous birth outcomes:** more than five children, short/long birth spacing, preterm deliveries, miscarriages, stillbirths.
- ❖ **Regional Variations: Tripura (adolescent pregnancies), Ladakh (advanced maternal age), Puducherry (short stature), Goa (high BMI), Meghalaya (more than five children), Andhra Pradesh (short birth spacing), Ladakh and Puducherry (caesarean delivery), Chandigarh (adverse birth outcomes, preterm births).**
- ❖ More common during the **third trimester (51%).**

WHY IN NEWS?

- ❖ *The successful INSAT-3DS launch highlights GSLV rocket's history and challenges, earning it the nickname 'naughty boy' in space exploration.*

NICKNAMED 'NAUGHTY BOY'

WHY 'NAUGHTY BOY'?

- ❖ **High Failure Rate: GSLV's 4 failures out of 15 launches** contrast with PSLV's 2 failures in 60 launches, earning it the nickname.
- ❖ **Recent Failure: August 2021's failed launch of EOS-03** heightened concerns despite a successful launch in May 2023.

THE PROBLEM:

- ❖ **Cryogenic Engine Issues: GSLV's troubles stem** from its cryogenic engine, **crucial for the final stage of flight.**
- ❖ **Complexity of Cryogenics: Liquid hydrogen and oxygen used as fuel** require **extreme low temperatures** for storage and handling.
- ❖ **Russian Origins:** GSLV's cryogenic engine, **reverse-engineered from Russian designs**, faced technological and geopolitical hurdles.



Indigenous Cryogenic Engine:

- ☛ **LVM3** employs a domestically developed, reliable **cryogenic engine**, enhancing ISRO's capabilities.

Future Prospects:

- ☛ **Success of GSLV's NISAR mission** with NASA collaboration will determine its credibility and potential advancements.

THE BUBONIC PLAGUE RETURNS

WHY IN NEWS?

- ❖ *Bubonic plague resurfaces in Oregon from a sick pet cat. Modern medicine mitigates threat, limiting concern for widespread outbreaks.*

ABOUT BUBONIC PLAGUE

- ❖ **Bubonic Plague Re-emerges:**



- ☛ Health officials confirm **first bubonic plague case in Oregon since 2005**, contracted from a sick pet cat.
- ❖ Cause:
 - ☛ **Yersinia pestis bacteria** spread between **animals and humans**, primarily **through fleas**.
- ❖ Transmission:
 - ☛ Infection **occurs through flea bites**, contact with **infected bodily fluids**, or inhalation of respiratory droplets.
- ❖ Symptoms:
 - ☛ Include **fever, headache, swollen lymph nodes (bubonic)**, and more severe symptoms like **pneumonia and septicemia**.



IMPACT OF HISTORICAL OUTBREAKS:

- ❖ **Black Death Legacy:**
 - ☛ Killed up to **half of Europe's population**, leaving genetic and societal impacts still felt today.
- ❖ **Modern Outlook:**
 - ☛ Despite recent case, **modern medicine and hygiene prevent widespread outbreaks. Fatality rate now around 11%.**

JNANPITH FOR GULZAR, SANSKRIT SCHOLAR RAMBHADRACHARYA

WHY IN NEWS?

- ❖ *Renowned Urdu poet **Gulzar** and Sanskrit scholar **Jagadguru Rambhadracharya** have been honored with the **58th Jnanpith Award** for their significant contributions to literature, recognizing Gulzar's impact on **Urdu poetry and Hindi cinema**, and Rambhadracharya's extensive work as a **spiritual leader, educator, and author**.*

ABOUT 58TH JNANPITH AWARD

- ❖ **Highest Literary Honor:**
 - ☛ India's top literary accolade, named after the **Sanskrit words "Jnana" (knowledge) and "Pitha" (seat)**.
- ❖ **Inception:**
 - ☛ **Established in 1961 by the Bharatiya Jnanpith trust**, associated with the Sahu Shanti Prasad Jain family, owners of the Times of India newspaper group.
- ❖ **Criteria:**
 - ☛ Conferred upon **Indian citizens writing in any of the 22 official languages** of India mentioned in the **VIII Schedule of the Constitution, including English**.
- ❖ **Evolution:**
 - ☛ Initially awarded for a single work, later **transitioned to a lifetime achievement recognition since 1982**.
- ❖ **Prize:**
 - ☛ **Includes a cash prize of 11 lakh rupees**, a citation plaque, and a **bronze replica of Saraswati**, the Hindu goddess of knowledge and wisdom.





ABOUT URDU POET GULZAR:

- ❖ **Background:**
 - ☛ **Sampooran Singh Kalra**, popularly known as **Gulzar**, renowned for his contributions to Hindi cinema and Urdu poetry.
- ❖ **Awards and Recognition:**
 - ☛ Received **Sahitya Akademi Award for Urdu (2002)**, **Dadasaheb Phalke Award (2013)**, and **Padma Bhushan (2004)**.
 - ☛ Earned at **least five National Film Awards** for his cinematic works.
- ❖ **Notable Works:**
 - ☛ Penned lyrics for "**Jai Ho**" from "**Slumdog Millionaire**," winning an **Oscar (2009)** and a **Grammy (2010)**.

ABOUT JAGADGURU RAMBHADRACHARYA:

- ❖ **Background:**
 - ☛ Founder and **head of Tulsi Peeth in Chitrakoot**, a renowned Hindu spiritual leader, educator, and prolific writer.
- ❖ **Accomplishments:**
 - ☛ Authored over 240 books, recognized as a polyglot fluent in 22 languages. Holds the position of one of the **four Jagadguru Ramanandacharyas of the Ramananda sect since 1982**.
- ❖ **Honors:**
 - ☛ **Awarded the Padma Vibhushan in 2015** for his contributions to literature and spiritual leadership.

**PLACES IN NEWS-
'SENEGAL'**

WHY IN NEWS?

- ❖ *Senegal's political crisis escalates as President Sall delays elections, sparking protests. Concerns rise over his bid for a controversial third term, challenging democratic norms and regional stability.*

GEOGRAPHICAL LOCATION OF SENEGAL

- ❖ Situated in **western Africa**, serving as the "**Gateway to Africa**."
- ❖ Borders the **Atlantic Ocean to the west**, **Mauritania to the north**, and shares boundaries with **Mali, Guinea, Guinea-Bissau, and The Gambia**.
- ❖ Ecologically diverse, featuring **semiarid grassland, oceanfront, and tropical rainforest**.
- ❖ National symbols include the **baobab tree and the lion**, reflecting its rich natural heritage.



HISTORICAL BACKGROUND

- ❖ **Part of ancient Ghana and Djolof kingdoms**, pivotal in **trans-Saharan trade routes**.
- ❖ Witnessed early European contact and **colonial disputes between England, France, Portugal, and the Netherlands**.
- ❖ **Gained independence in 1960** under the leadership of **Léopold Senghor**, transitioning from French colony to a sovereign state.

RIVER AND PENINSULA BOUNDARIES

- ❖ Bound to the north and **northeast by the Sénégal River**, separating it from **Mauritania**.



- ❖ Bordered to the **east by Mali**, south by **Guinea and Guinea-Bissau**, and west by the **Atlantic Ocean**.
- ❖ **Cape Verde Peninsula** marks the **westernmost point of Africa**.
- ❖ **The Gambia**, a narrow strip of territory, extends **eastward into Senegal** along the **Gambia River**, isolating the **Casamance region**.

