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DAILY CURRENT AFFAIRS

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TODAY'S DATE



27 JULY 2026

---MONDAY---



Kolkata Topper

VAISHNA BISWAS

AIR - 367 | CSE 2025

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OUR UPSC TOPPERS 2023



IPS LAXMAN PRATAP
RANK - 597

FORMER ASST. COMMANDANT IN BSF
CITY COLLEGE KOLKATA

OUR UPSC TOPPERS 2024



IRS SARLA JAKHER
AIR 593

CITY COLLEGE KOLKATA



IRS TANMAY
AIR 346

IIT KHARAGPUR



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DREAMS.**

**OUR
MISSION.**

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THE EXTRA
ORDINARY.

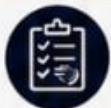


Converting Possibilities into Reality

PRELIMS MAINS | INTERVIEW



DAILY CURATED
NEWS



EXAM ORIENTED
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SMART NOTES &
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BOOST YOUR
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DAILY CURRENT AFFAIRS-

1. Qdenga (TAK-003): India's First Approved Dengue Vaccine
2. Great Indian Bustard (GIB) Rewilding Programme
3. High-Powered Task Force on Examination Reforms
4. Quantum Computing & AI for Personalized Immune Therapies
5. Assam Floods 2026

1.Qdenga (TAK-003): India's First Approved Dengue Vaccine

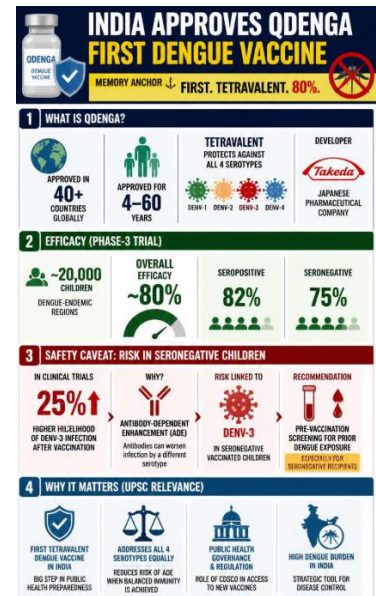
Why in News?

India has approved **Qdenga (TAK-003)**, developed by **Takeda (Japan)**, as its **first dengue vaccine**. While the vaccine offers protection against all four dengue virus serotypes, experts have raised concerns regarding its **variable efficacy**, particularly among **seronegative children**, highlighting the need for careful deployment and surveillance.

Key Highlights

Aspect	Details
Vaccine	Qdenga (TAK-003)
Developed By	Takeda Pharmaceuticals (Japan)
Approved By	Drug Controller General of India (DCGI)
Eligible Age Group	4–60 years
Dosage	Two doses administered three months apart
Target	Protection against all four dengue virus serotypes (DENV-1, DENV-2, DENV-3 and DENV-4)

- Qdenga is a **live-attenuated tetravalent dengue vaccine** developed using **recombinant DNA technology**.
- It is designed to generate immunity against **all four dengue virus serotypes**, thereby reducing the risk of severe dengue and hospitalization.
- The vaccine uses a **weakened DENV-2 virus as the genetic backbone**, incorporating surface proteins of DENV-1, DENV-3 and DENV-4.
- It is administered as **two subcutaneous doses**, with an interval of **three months** between doses.
- Qdenga has received **WHO prequalification** and is approved in **more than 40 countries**.



Why is a Dengue Vaccine Difficult to Develop?

- Dengue virus exists in **four distinct serotypes**, and infection with one serotype provides long-term immunity only against that serotype.
- Subsequent infection by a different serotype may trigger **Antibody-Dependent Enhancement (ADE)**, leading to severe dengue.
- Therefore, a successful vaccine must produce **balanced immunity against all four serotypes** without increasing the risk of severe disease.

Safety Concerns

- Clinical trials demonstrated **overall efficacy of around 80%**, but protection varied across different serotypes.
- Evidence indicated a **higher incidence of DENV-3 infection among seronegative vaccinated children**, raising concerns regarding possible **Antibody-Dependent Enhancement (ADE)**.
- Available evidence regarding protection against **DENV-4** remains limited because of insufficient trial data.
- Experts have recommended **pre-vaccination screening** for previous dengue infection, particularly in areas with a large seronegative population, until more long-term evidence becomes available.

Significance

- Marks the beginning of **vaccine-based dengue prevention** in India.

- Can substantially reduce **hospitalization and severe dengue cases** among high-risk populations.
- Complements India's existing strategy of **Integrated Vector Management** under the National Vector Borne Disease Control Programme (NVBDCP).
- Strengthens domestic vaccine manufacturing through collaboration with **Biological E.**
- Represents an important step towards reducing India's large dengue disease burden.

Challenges

- Variable protection against different dengue serotypes.
- Potential safety concerns among **seronegative children** due to ADE.
- High vaccine cost may limit accessibility if introduced only through the private sector.
- Ensuring completion of the **two-dose schedule**, particularly among migrant and mobile populations.
- Vaccination alone cannot replace **vector control**, surveillance and community participation.

Way Forward

- Consider targeted vaccination strategies based on regional epidemiology.
- Strengthen surveillance to monitor vaccine safety and effectiveness after rollout.
- Evaluate the feasibility of **pre-vaccination screening** in high-risk groups.
- Ensure affordable pricing through government procurement if included in public immunization programmes.
- Continue integrated mosquito control measures alongside vaccination.

UPSC Prelims MCQ

Q. With reference to Qdenga (TAK-003), consider the following statements:

1. It is a **live-attenuated tetravalent vaccine** designed to provide protection against all four dengue virus serotypes.
2. One of the concerns associated with the vaccine is the possibility of **Antibody-Dependent Enhancement (ADE)** among certain seronegative individuals.
3. Dengue is caused by a virus having **four distinct serotypes**, making vaccine development particularly challenging.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

UPSC Mains Question (10 Marks)

The approval of India's first dengue vaccine marks a significant advancement in public health. Discuss the opportunities and challenges associated with the introduction of Qdenga (TAK-003), with particular reference to Antibody-Dependent Enhancement (ADE) and India's dengue control strategy.

2.Great Indian Bustard (GIB) Rewilding Programme

Why in News?

In a first for India, **three captive-bred Great Indian Bustard (GIB) chicks** have been shifted to a specially designed **rewilding tunnel** at the **Godawan Conservation Centre, Ramdevra (Jaisalmer, Rajasthan)**. The initiative is aimed at preparing the critically endangered birds for successful release into the wild by minimizing human interaction and developing natural survival skills.

Key Highlights

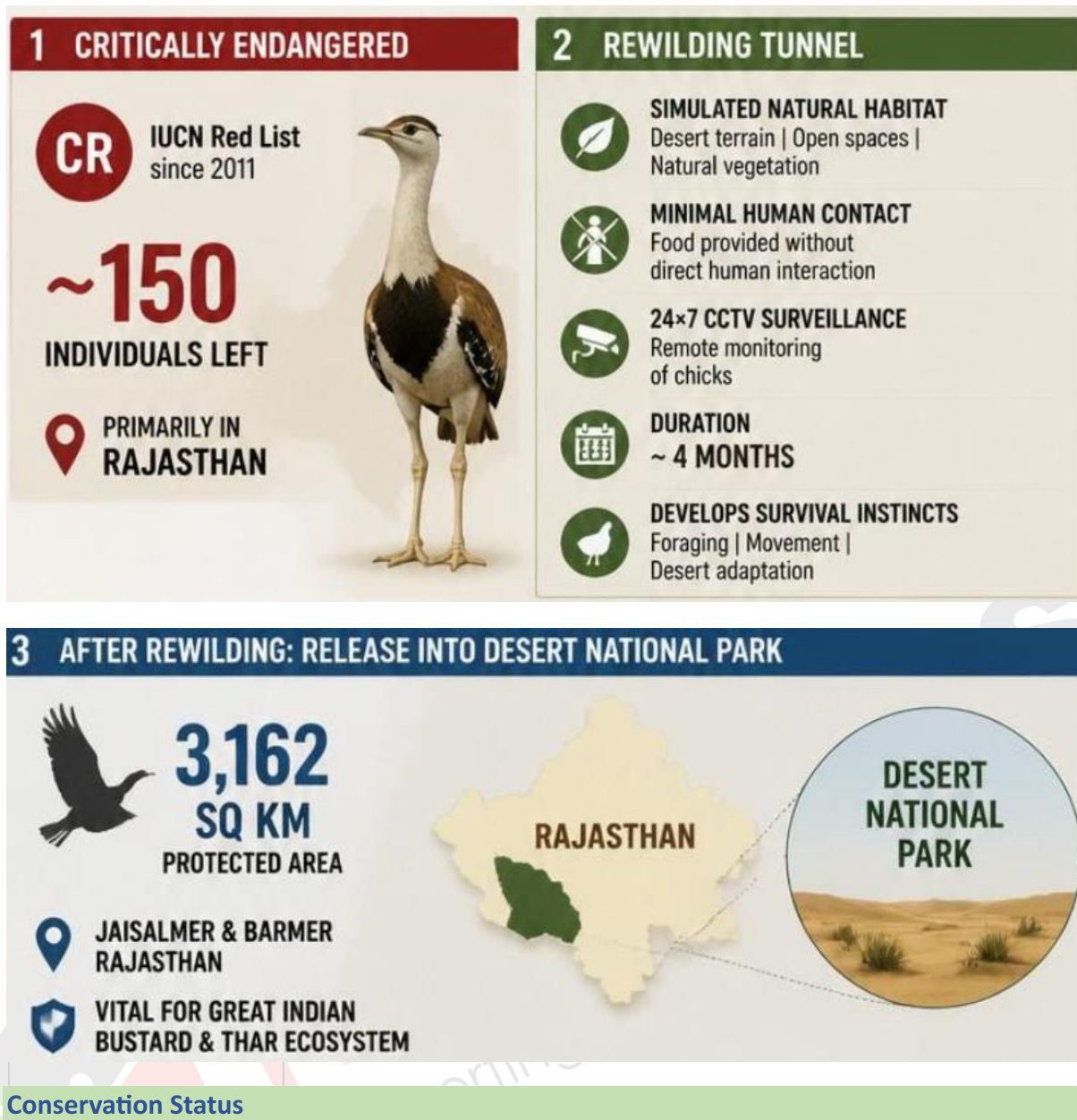
Aspect	Details
Species	Great Indian Bustard (<i>Ardeotis nigriceps</i>)
Conservation Facility	Godawan Conservation Centre, Ramdevra, Jaisalmer
Initiative	First captive-bred chicks placed in a rewilding tunnel
Rewilding Duration	Approximately four months before release
Proposed Release Site	Desert National Park, Rajasthan
Conservation Status	Critically Endangered (IUCN)

About the Rewilding Tunnel

- The **₹9.25-crore rewilding tunnel** has been developed to facilitate the transition of captive-bred birds into the wild.
- It recreates the **natural grassland and desert environment**, enabling birds to develop essential survival behaviours.
- Human interaction is minimized through:
 - Remote CCTV monitoring
 - Automated food delivery systems
 - Limited direct handling by conservation staff
- The objective is to ensure that the birds acquire natural skills such as **foraging, predator avoidance, movement across open landscapes and adaptation to desert ecosystems** before their release.

About the Great Indian Bustard (GIB)

Feature	Details
Scientific Name	<i>Ardeotis nigriceps</i>
State Bird	Rajasthan (Godawan)
Habitat	Arid and semi-arid grasslands, scrublands and open plains
Distribution	Primarily Rajasthan, with small populations in Gujarat, Maharashtra, Karnataka and Andhra Pradesh
Diet	Omnivorous—feeds on insects, seeds, grass, small reptiles and rodents



Conservation Status

Organisation / Law	Status
IUCN Red List	Critically Endangered
Wildlife (Protection) Act, 1972	Schedule I
CITES	Appendix I
CMS (Bonn Convention)	Appendix I

Major Threats

- Collision with **overhead transmission and power lines**, which is the leading cause of mortality.

- Loss and fragmentation of grassland habitats due to agriculture, infrastructure development and renewable energy projects.
- Predation on eggs and chicks by feral dogs and other predators.
- Disturbance from human activities and historical poaching.
- Misclassification of grasslands as "wastelands," resulting in inadequate conservation attention.

Conservation Initiatives

- **Project Great Indian Bustard (2013)** launched by the Rajasthan Government.
- **Conservation Breeding Programme** implemented by the Wildlife Institute of India (WII) in collaboration with the Ministry of Environment, Forest and Climate Change (MoEFCC).
- Establishment of captive breeding centres at **Sudasari** and **Ramdevra**.
- Development of **rewilding infrastructure** to enable successful reintroduction into natural habitats.
- Supreme Court-directed measures for **mitigating power line collisions** in priority GIB habitats.

Significance

- Marks an important transition from **captive breeding to species reintroduction**, a crucial step in recovering wild populations.
- Demonstrates the application of scientific conservation techniques to one of the world's most endangered birds.
- Supports the long-term restoration of **grassland ecosystems**, which are among India's most threatened habitats.
- Contributes to the conservation of a flagship species while promoting ecosystem-based biodiversity management.

UPSC Prelims MCQ

Q. With reference to the Great Indian Bustard (GIB), consider the following statements:

1. It is endemic to the Indian subcontinent and is primarily associated with arid and semi-arid grassland ecosystems.

2. It is listed as **Critically Endangered** under the IUCN Red List and included in **Schedule I** of the Wildlife (Protection) Act, 1972.
3. The recent rewilding initiative aims to prepare captive-bred birds for release into the wild by minimizing human contact and promoting natural survival behaviour.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) **1, 2 and 3**

Answer: (d)

UPSC Mains Question (10 Marks)

The Great Indian Bustard has become a symbol of the conservation challenges facing India's grassland ecosystems. Discuss the significance of captive breeding and rewilding programmes in ensuring the long-term survival of the species.

3.High-Powered Task Force on Examination Reforms

Why in News?

Following the **NEET-UG paper leak controversy**, the Prime Minister has constituted a **High-Powered Task Force on Examination Reforms**, chaired by **Nandan Nilekani**, to recommend measures for making India's examination system more **transparent, secure, technology-driven and accountable**.

Key Highlights

Aspect	Details
Initiative	High-Powered Task Force on Examination Reforms
Chairperson	Nandan Nilekani (Co-founder, Infosys)
Objective	Reform the examination ecosystem through technology, governance and institutional reforms
Background	Constituted following concerns over examination irregularities, particularly the NEET-UG paper leak
Composition	Six-member multidisciplinary panel comprising experts from technology, education, security, space and public administration

Objectives of the Task Force

- Recommend measures to enhance the **credibility, transparency and integrity** of public examinations.
- Integrate **advanced digital technologies** for secure conduct of examinations.
- Strengthen systems for **question paper security, candidate authentication and examination logistics**.
- Develop a robust framework to prevent **paper leaks, impersonation and organized examination fraud**.
- Suggest long-term reforms for improving governance of national-level entrance examinations.

Composition of the Task Force

The Task Force comprises experts from diverse fields to provide multidisciplinary solutions:

- **Nandan Nilekani** – Digital governance and technology.
- **S. Somanath** – Space technology and systems engineering.
- **Tapan Deka** – Internal security and intelligence.
- **V. Kamakoti** – Higher education and technological innovation.
- **Anita Karwal** – School education and educational administration.
- **Amrit Lal Meena** – Public administration and logistics management.

Background: Public Examinations (Prevention of Unfair Means) Act, 2024

The Task Force complements the implementation of the **Public Examinations (Prevention of Unfair Means) Act, 2024**, which provides the first comprehensive legal framework to curb examination malpractices.

Salient Features

- Covers examinations conducted by agencies such as:
 - Union Public Service Commission (UPSC)
 - Staff Selection Commission (SSC)
 - National Testing Agency (NTA)

- Railway Recruitment Boards (RRBs)
- Institute of Banking Personnel Selection (IBPS)
- Defines various unfair practices including:
 - Question paper leaks
 - Tampering with digital systems
 - Candidate impersonation
 - Creation of fake examination websites
 - Organized examination fraud
- Prescribes stringent penalties including imprisonment and heavy monetary fines.
- Declares offences as **cognizable, non-bailable and non-compoundable**.

Significance

- Restores public confidence in competitive examinations.
- Promotes **merit-based and transparent recruitment**.
- Encourages adoption of **digital technologies**, biometric authentication and secure examination infrastructure.
- Strengthens institutional accountability among examination conducting bodies.
- Reduces the influence of organized examination fraud networks.

Way Forward

- Adopt end-to-end encrypted digital examination systems.
- Strengthen biometric verification and AI-based monitoring.
- Establish dedicated fast-track courts for timely disposal of examination-related offences.
- Conduct periodic third-party security audits of examination infrastructure.
- Build capacity of examination authorities through continuous technological upgradation and training.

UPSC Prelims MCQ

Q. With reference to the Public Examinations (Prevention of Unfair Means) Act, 2024, consider the following statements:

1. It provides a legal framework to prevent organized malpractices such as question paper leaks and candidate impersonation in specified public examinations.
2. Offences under the Act are cognizable, non-bailable and non-compoundable.
3. The recently constituted High-Powered Task Force on Examination Reforms aims to recommend technology-driven measures for strengthening the integrity of India's examination system.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
 (b) 2 and 3 only
 (c) 1 and 3 only
 (d) 1, 2 and 3

Answer: (d)

UPSC Mains Question (10 Marks)

Repeated examination irregularities have highlighted structural weaknesses in India's public examination system. Discuss the significance of the High-Powered Task Force on Examination Reforms and examine how technology can enhance the transparency, security and credibility of competitive examinations.

4. Quantum Computing & AI for Personalized Immune Therapies

Why in News?

Researchers at the **Technical University of Denmark (DTU)** have combined **Photonic Quantum Computing** with **Artificial Intelligence (AI)** to design peptides capable of effectively binding to **Human Leukocyte Antigen (HLA)** molecules. The breakthrough could accelerate the development of **personalized cancer vaccines** and next-generation immunotherapies.

Key Highlights

Aspect	Details
Institution	Technical University of Denmark (DTU)
Technology	Photonic Quantum Computing + AI

Innovation	AI-designed peptides with improved HLA binding
Validation	Successfully demonstrated in laboratory experiments
Potential Applications	Personalized cancer vaccines, immunotherapy, precision medicine

Key Points

- Researchers used a **photonic quantum computer** to generate optimized starting points for AI, enabling exploration of a much larger peptide design space.
- The AI identified peptide sequences capable of binding strongly to **Human Leukocyte Antigen (HLA)** molecules, a prerequisite for triggering immune responses.
- The approach proved particularly useful for **data-poor HLA variants**, which are common in genetically underrepresented populations.
- Laboratory experiments confirmed that the quantum-designed peptides successfully bound to HLA molecules, demonstrating practical applicability beyond computer simulations.
- The study highlights one of the earliest applications of **quantum-enhanced AI** in biomedical research.

Why is HLA Binding Important?

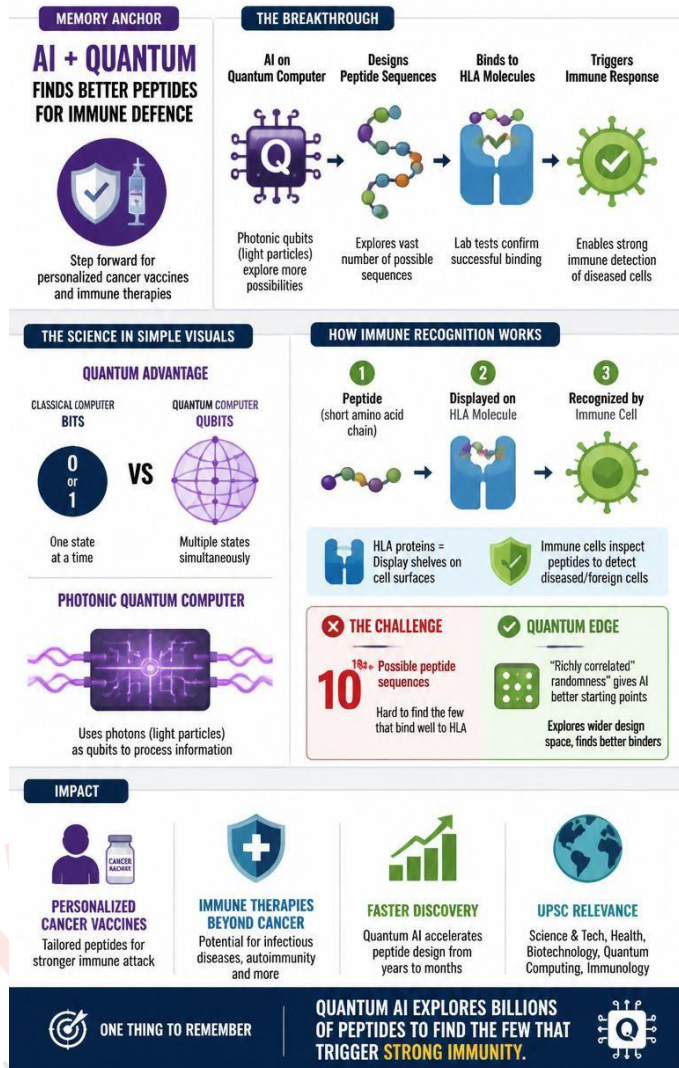
- **HLA (Human Leukocyte Antigen)** molecules present peptide fragments on the surface of cells for recognition by **T-lymphocytes**.

- Strong peptide-HLA binding enables the immune system to identify **infected or cancerous cells**.
- Since HLA genes are highly polymorphic, peptide design must often be **personalized**, making AI-based optimization highly valuable.

Significance

- Accelerates the development of **personalized cancer vaccines** based on an individual's HLA profile.
- Improves vaccine and immunotherapy design for populations with limited biological datasets.
- Reduces the time and computational effort required to identify effective therapeutic peptides.
- Demonstrates the emerging convergence of **Quantum Computing, Artificial Intelligence and Biotechnology** in precision healthcare.

QUANTUM AI DESIGNS PEPTIDES BOOSTING CANCER VACCINE POTENTIAL



UPSC Prelims MCQ

Q. Consider the following statements:

- Human Leukocyte Antigen (HLA) molecules present peptide fragments to immune cells for recognition.
- The recent DTU study combined photonic quantum computing with Artificial Intelligence to design therapeutic peptides.
- The technology has potential applications in developing personalized cancer vaccines.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

UPSC Mains Question (10 Marks)

Discuss how the convergence of Quantum Computing and Artificial Intelligence can transform precision medicine. Explain its potential in the development of personalized immunotherapies and cancer vaccines.

5.Assam Floods 2026

Why in News?

Assam has witnessed one of its worst flood events in recent years, affecting over **6.5 lakh people**, claiming **66 lives**, and inundating **810 villages**. Experts attribute the disaster to a combination of **extreme rainfall, climate change, geomorphological changes and human-induced degradation of river catchments**.

Key Highlights

Aspect	Details
Worst-hit Districts	Sivasagar, Charaideo and Jorhat
Population Affected	Over 6.54 lakh people
Death Toll	66
Major Rivers	Dikhow, Dhansiri, Disang, Janji and Darika (tributaries of the Brahmaputra)
Disaster Authority	Assam State Disaster Management Authority (ASDMA)

Why Were the Floods So Severe?

- Heavy rainfall over **Nagaland and Upper Assam** caused a sudden rise in the water levels of Brahmaputra tributaries already flowing near danger levels.

- Meteorological data showed **137 mm rainfall within 8–9 hours**, indicating an extreme rainfall event rather than a cloudburst.
- The **Brahmaputra's high base flow** during the monsoon reduced its capacity to absorb additional runoff from tributaries.
- Floodwaters deposited large quantities of **sediment**, disrupting transportation, agriculture and relief operations.



Factors Aggravating the Floods

- **Climate Change:** Increasing frequency of short-duration, high-intensity rainfall events has enhanced flash flood risks across the Brahmaputra basin.
- **Deforestation:** Loss of forest cover in upper catchments accelerates surface runoff, soil erosion and silt deposition in rivers.
- **Mining and Excessive Excavation:** River valley excavation destabilizes slopes, increasing mudflows and sediment load.
- **Siltation:** Continuous sediment deposition raises riverbeds, reducing the carrying capacity of rivers and increasing overflow during monsoons.
- **Floodplain Encroachment:** Expansion of settlements into natural floodplains has increased exposure to flood hazards.

Why is Assam Highly Flood-Prone? (Value Addition)

- The **Brahmaputra is one of the world's most sediment-laden rivers**, carrying enormous quantities of silt from the young Himalayas.

- The river has a **braided channel system**, making it highly unstable and prone to frequent channel shifting.
- Nearly **40% of Assam's geographical area** is vulnerable to recurrent flooding.
- Numerous tributaries from **Arunachal Pradesh, Nagaland and Bhutan** contribute sudden runoff during intense rainfall events.

The Brahmaputra, or "Son of Brahma," is one of the world's most dynamic and powerful river systems, unique for its massive discharge and its complex transboundary journey across Tibet, India, and Bangladesh.

As of **July 2026**, the river system has been in the spotlight due to unprecedented flooding patterns in Assam and growing geopolitical friction regarding upstream dam construction.

The Transboundary Journey

The river changes its character and its name as it traverses different geographical zones:

1. **Tibet (China):** Originates from the **Angsi Glacier** (earlier believed to be Chemayungdung) near Mansarovar. It flows eastward as the **Yarlung Tsangpo** (meaning "The Purifier").
2. **The "Great Bend":** Near the **Namcha Barwa** peak, it takes a sharp U-turn, carving one of the world's deepest gorges before entering India.
3. **Arunachal Pradesh (India):** Enters as the **Siang** or **Dihang**.
4. **Assam (India):** After joining the **Dibang** and **Lohit** rivers, it is officially called the **Brahmaputra**. It flows for 700 km as a massive "braided" river.
5. **Bangladesh:** Turns south near Dhubri and enters Bangladesh as the **Jamuna**. It eventually merges with the **Padma** (Ganga) and drains into the Bay of Bengal as the **Meghna**.

Tributary Network

The river system is fed by numerous Himalayan and peninsular streams.

North Bank Tributaries (Himalayan Origin)

These are flashy, carry high sediment, and have very steep slopes.

- **Subansiri** (The 'Gold River' - largest tributary)
- **Kameng** (Jia Bharali)
- **Manas**
- **Sankosh**
- **Teesta** (joins in Bangladesh)

South Bank Tributaries

These have gentler slopes and are generally less violent than the northern counterparts.

- **Burhi Dihing**
- **Dhansiri** (South)
- **Kopili**
- **Lohit & Dibang** (the "starting" tributaries in the valley)

★ KEY FACT

The Brahmaputra is the 9th largest river in the world by discharge and the 15th longest (~2,900 km).

Current Challenges & Strategic Concerns (2025-2026)

- **2026 Assam Floods:** Recent floods have shown a shift in behavior, affecting districts like Sivasagar and Jorhat that were previously considered safer. Experts are calling for a move away from "embankment-only" strategies toward **Integrated River Basin Management (IRBM)**.
- **Upstream Hydropower:** In late 2024, China officially approved a "Mega Dam" project on the Yarlung Tsangpo in Medog County (near the LAC). India and Bangladesh fear this could lead to "water weaponization" or sudden flash floods (water bombs).
- **Expert Level Mechanism (ELM):** In May 2026, India pushed for early ELM meetings with China to resume hydrological data sharing, which has been inconsistent since the 2022 Galwan incident.

📌 MAINS RELEVANCE

The "Red River" (Brahmaputra) is central to India's 'Act East' policy, serving as National Waterway-2 (Sadiya to Dhubri) for inland navigation and trade with Southeast Asia.

UPSC Prelims MCQ

Q. With reference to floods in Assam, consider the following statements:

1. The Brahmaputra carries one of the highest sediment loads among the world's rivers.
2. Deforestation in upstream catchments increases runoff and siltation, thereby aggravating floods.
3. The recent Assam floods have been linked solely to a cloudburst event in Nagaland.

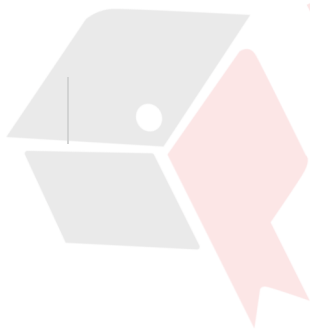
Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

UPSC Mains Question (10 Marks)

The increasing frequency of floods in Assam reflects the combined impact of climate change and unsustainable land-use practices. Discuss the factors responsible for recurrent flooding in the Brahmaputra basin and suggest suitable mitigation measures.



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