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Current Affairs - 31 August 2025

WHAT IS E-20 FUEL?



- **Automotive fuel** blends comprising **20% ethanol** and **80% gasoline** are referred to as E20 fuel.
- What is Ethanol Blending?
 - Ethanol blending is a process of mixing or **blending ethanol, a renewable biofuel, with petrol** to create a cleaner and more sustainable fuel.
 - Since **ethanol** is a viable biofuel that can be **derived by processing biomass sources** such as sugarcane, the practice of ethanol blending has largely **reduced India's dependence on fossil fuels** and the **high-value import of crude oil**.
 - Moreover, by adding ethanol to petrol, the **oxygen content of fuel is increased, leading to lower emissions and cleaner burning**.
 - Additionally, since ethanol in India is largely derived from sugarcane molasses, rice, maize, and other agricultural sources, ethanol blending has **also elevated the agricultural sector in India**.
 - With ethanol-blended petrol, India **aims to tackle its ever-increasing fossil fuel** dependence in a greener and more sustainable way.

India's Journey of Ethanol Blending:

- With several countries widely adopting ethanol blending, India's journey towards achieving ethanol-blended petrol began in **2003**, when the Government of India **officially launched its Ethanol Blended Petrol (EBP) Programme**.
- Since then, the **ethanol blending** in India has come a long way, **achieving a 10% ethanol blend target in 2021-22**, which was further increased to 12.06% in 2022-23, 14.06% in 2023-24, and **20% in July 2025**, which was **initially set to be achieved by 2030**.



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What is ethanol?

- Ethanol, also known as **ethyl alcohol**, is a type of **alcohol** that is commonly used in various applications.
 - It is a **clear, colourless liquid** with a **characteristic odour and taste**.
 - Ethanol has the chemical formula **C₂H₅OH** and is composed of **carbon, hydrogen, and oxygen**
 - **Pure ethanol is nontoxic and biodegradable**, and if spilled, they break down into harmless substances.
 - However, **fuel ethanol contains denaturants** to make fuel ethanol **undrinkable**.
 - **How is ethanol sourced?**
 - Ethanol can be produced from various sources, but it is **often derived from renewable resources such as crops** like corn, sugarcane, barley, and wheat.
 - It can also be **produced from cellulosic materials** like agricultural residues and wood.
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WHAT IS VRINDAVANI VASTRA?



- The Vrindavani Vastra is a **silk textile woven in Assam**.
- The **childhood stories of Lord Krishna in Vrindavan**, his divine pastimes, and various events are **woven with thread on this cloth**.
- It was **created under the guidance of Srimanta Sankardeva**, at the request of **Koch king Nara Narayan**, who ruled over parts of modern-day Assam and West Bengal.
 - Notably, **Nara Narayan had sheltered Sankardeva after the Vaishnav saint was targeted by the Ahom kingdom** on the instigation of Brahmin priests in the state.
- The textile serves as a **testament to Assamese weaving**, incorporating elements from various artistic traditions, and **travelled from Assam to Tibet** before being **acquired by the British Museum in 1904**.



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- The exhibit, acquired by the British Museum, is **nine and a half metres long** and is made up of **several pieces of silk drapes** and originally featured 15 separate pieces that were later assembled.
- A masterpiece of sacred art, the Vrindavani Vastra is a **central part of Assamese Vaishnavism**.

INDIAN OCEAN NAVAL SYMPOSIUM



- It is a **voluntary initiative** that seeks to **increase maritime co-operation among navies of the littoral states of the Indian Ocean Region** by providing an open and inclusive forum for discussion of regionally relevant maritime issues.
- It was **conceived by the Indian Navy in 2008** as a forum which seeks to enhance maritime co-operation among Navies of the littoral states of the Indian Ocean Region.
- The inaugural edition of IONS was held in Feb 2008 at New Delhi, with **Indian Navy as the Chair for two years (2008 – 2010)**.
- There are **36 littoral in the Indian Ocean** which have been geographically grouped into the following four sub-regions
 - **South Asian Littorals:** Bangladesh, India, Maldives, Pakistan, Seychelles, Sri Lanka and United Kingdom (British Indian Ocean Territory)
 - **West Asian Littorals:** Iran, Oman, Saudi Arabia and United Arab Emirates
 - **East African Littorals:** France (Reunion), Kenya, Mauritius, Mozambique, South Africa and Tanzania.
 - **South East Asian and Australian Littorals:** Australia, Indonesia, Malaysia, Myanmar, Singapore, Thailand and Timor-Leste.
 - **Observers:** China, Germany, Italy, Japan, Madagascar, the Netherlands, Russia and Spain.



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PURPLE NOTICE



- It is one of **eight types published by the Interpol**
- **Purpose:** It provides member countries with **information on modus operandi, objects, devices and concealment methods used by criminals.**
- Unlike notices that target specific individuals (such as Red Notices), Purple Notices focus on practices and tools that **pose a threat to public safety.**
- **Other notices of Interpol:** Red, yellow, blue, Black, green, Orange, Silver Notice (pilot phase)

Key Facts about Interpol

- The International Criminal Police Organisation (Interpol) was founded in 1923
- **Members:** Interpol is an international police organisation made up of **196 member countries.**
- It **does not work under the UN.** It has enjoyed a special role – that of Permanent Observer at the United Nations – since 1996.
- **Headquarter:** Lyon, France.
- **Functions of Interpol**
 - It is not a police force in the traditional sense—its agents are not able to arrest criminals.
 - It is more of an **information-sharing network**, providing a way for national police forces to co-operate effectively and
 - Tackle international crime ranging from **human trafficking and terrorism** to money laundering and illegal art dealing.
 - **Sharing of information** is done by issuing colour-coded notices in four languages – English, Spanish, French, and Arabic.
 - The organization operates centralized criminal databases that contain fingerprint records, DNA samples and stolen documents.



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Current Affairs - 31 August 2025

ADIVAANI



- It is an **AI-based translation tool** that serves as the foundation for a future large language model dedicated to **tribal languages**.
- It is India's first **AI-powered translator for tribal languages**.
- It is developed under the banner of **Janjatiya Gaurav Varsh**.
- It is designed to bridge communication gaps between tribal and non-tribal communities, while safeguarding endangered tribal languages using advanced Artificial Intelligence (AI).
- The project combines advanced AI technologies with community-driven approaches to protect, promote, and revitalize tribal languages and cultures across India.
- It is developed by a national consortium of premier institutions led by **IIT Delhi with BITS Pilani, IIIT Hyderabad, and IIIT Nava Raipur in collaboration with Tribal Research Institutes (TRIs) in Jharkhand, Odisha, Madhya Pradesh, Chhattisgarh, and Meghalaya,**

The project aims to:

- **Enable real-time translation** (text and speech) between Hindi/English and tribal languages.
- Provide **interactive language learning** for students and early learners.
- **Digitally preserve folklore**, oral traditions, and cultural heritage.
- **Support digital literacy**, healthcare communication, and civic inclusion in tribal communities.
- **Awareness of the government schemes** and important speeches
- **Scope & Languages:** In its Beta launch, Adivaani supports Santali (Odisha), Bhili (Madhya Pradesh), Mundari (Jharkhand), Gondi (Chhattisgarh)

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Methodology & Features of Adi Vani

- AI Language Models: Refined deployment of models such as **No Language Left Behind** (NLLB) and **IndicTrans2** for low-resource tribal languages.
 - Community Participation: TRIs, experts, and communities are involved in data collection, validation, and iterative development.
 - **Functional Toolkit of Adi Vani**
 - Text-to-Text, Text-to-Speech, Speech-to-Text, Speech-to-Speech translations.
 - **Optical Character Recognition (OCR)** for digitizing manuscripts and primers.
 - Bilingual dictionaries and curated repositories.
 - Subtitles for Prime Minister's speeches, health advisories (e.g., Sickle Cell Disease awareness), and information on government schemes and initiatives in tribal languages.
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GANGOTRI GLACIER SHOWS SIGNS OF EARLIER SNOWMELT

Composition of the Gangotri Glacier System (GGS)

- The GGS comprises four glaciers — **Meru** (7 km²), **Raktavaran** (30 km²), **Chaturangi** (75 km²), and the largest, **Gangotri** (140 km²).
- Together, the system spans **549 km²**, with about **48% glacierised area**, across elevations from **3,767 m to 7,072 m**.
- The GGS receives precipitation from **western disturbances in winter (October–April)** and the **Indian summer monsoon in summer (May–September)**.
- Seasonal rainfall (May–October) averages **260 mm**, with a mean temperature of **9.4°C** recorded between 2000–2003.

New Study on Gangotri Glacier System (GGS)

- The **Hindu Kush Himalaya (HKH)** holds vital snow and ice reserves that feed major rivers like the Indus, Ganga, and Brahmaputra, sustaining millions of lives.
- In recent decades, climatic changes have **altered the cryosphere and hydrological cycles**, leading to faster glacial retreat and shifting seasonal discharge patterns.



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Current Affairs - 31 August 2025

- While most modelling studies focus on large river catchments, it is difficult to separate the impacts of snowmelt and precipitation there.
- Smaller systems like the GGS allow for more precise assessments, making it a preferred choice for hydrologists and climate scientists.
- However, long-term discharge analysis and understanding climatic drivers have remained limited.

Key Findings of the Study

- The study combined the **Spatial Processes in Hydrology (SPHY) glacio-hydrological model** with the **Indian Monsoon Data Assimilation and Analysis (IMDAA) dataset (1980–2020)** to reconstruct GGS discharge trends.
 - SPHY model is a **hydrological modelling tool** suitable for a wide range of water resource management applications.
- It found that maximum discharge occurs in **summer**, peaking in **July (129 m³/s)**.
- Snow melt declined due to shrinking snow cover, whereas **rainfall-runoff and base flow increased**.
- The analysis highlighted that **summer precipitation** was the main driver of annual discharge, followed by **winter temperature**.

Implications of the Study on GGS

- The findings highlight **warming-induced hydrological changes** in the Gangotri Glacier System (GGS), with increasing rainfall run-off and base flow.
 - This aligns with the **25% excess rainfall** observed in North India's summer monsoon (June–August), which has caused frequent floods in Uttarakhand, Jammu, and Himachal Pradesh.
 - While such events are often hastily termed “cloudbursts” without scientific evidence, climate change does raise the risk of extreme rainfall.
 - The study stresses the **need for sustained field monitoring and advanced modelling** to improve **water resource management** in glacier-fed river basins, ensuring resilience against future hydrological and climatic shifts.
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SUPREME COURT'S SOCIAL MEDIA REGULATION ORDER: FREE SPEECH AND ACCOUNTABILITY

Recently, the Supreme Court of India directed the Union government to draft comprehensive guidelines for regulating social media content.

- The order comes amid growing concerns over the misuse of free speech by influencers and digital creators for commercial gain, often at the cost of public sentiment and individual dignity.
- The directive marks a significant step in balancing constitutional freedoms with accountability in the digital age.

The Supreme Court's Directive

- A two-judge bench stressed that while free speech is a constitutional right under **Article 19(1)(a)**, it cannot be used purely for commercial purposes in a manner that offends vulnerable groups.
- The case originated from a petition filed by a non-profit supporting individuals with **Spinal Muscular Atrophy (SMA)**, who alleged derogatory remarks made by comedians had violated their dignity.
- The court ordered the Centre to frame regulations in consultation with the **National Broadcasters and Digital Association (NBDA)** and also directed the comedians involved to issue public apologies on their social media platforms.

Constitutional Framework on Free Speech

- The Constitution permits restrictions on free speech under **Article 19(2)** on limited grounds, including:
 - Sovereignty and integrity of India
 - Security of the State
 - Friendly relations with foreign states
 - Public order
 - Decency and morality



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Current Affairs - 31 August 2025

- Contempt of court
- Defamation
- Incitement to offences
- The Supreme Court has repeatedly held that restrictions cannot extend beyond these grounds.

Existing Legal Framework for Digital Media

- Social media companies in India are already governed by the **IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021** under the IT Act, 2000.
- These rules require platforms to restrict obscene, pornographic, or harmful content.
- Influencers and online creators are also subject to criminal law if their speech amounts to defamation, incitement, or other recognised offences.
- Experts caution that any additional guidelines must be carefully drafted to avoid infringing upon free speech, given the Supreme Court's strong history of protecting this right.

Broader Implications

- The Court's intervention raises critical questions about the future of free speech in the digital age.
 - With nearly **491 million Indians active on social media**, the regulation of online platforms is no longer just a legal issue but also a societal necessity.
 - While the move is aimed at curbing abusive or derogatory content disguised as entertainment or marketing, it also places the responsibility on the government to ensure that regulation does not become a tool of censorship.
 - Legal scholars argue that the Supreme Court's "polyvocality" in free speech jurisprudence, arising from differing judicial interpretations, has resulted in inconsistencies.
 - This ruling, therefore, may provide an opportunity to consolidate principles of accountability without diluting constitutional protections.
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