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Current Affairs - 18 August 2025

INDIA AT 79TH INDEPENDENCE DAY - JOURNEY, ACHIEVEMENTS, AND THE ROAD AHEAD

- India celebrated its 79th Independence Day with pride as a **resilient, confident, and rising nation**.
- Despite historical challenges such as US sanctions post-Pokhran (1998) and the Seventh Fleet episode (1971 war with Pakistan), India has emerged stronger.
- Today, it is recognized as **one of the fastest-growing economies** and a major global player.

India's Economic Growth:

- **GDP growth:** From \$30 billion (1947) to a projected \$4.19 trillion (2025) (IMF estimates).
- **Global standing:**
 - **In nominal GDP** – 4th largest by 2025.
 - **In PPP terms** – Already 3rd largest (\$17.65 trillion).

Socio-Economic Transformation:

- **Poverty:** Measured at the \$3/day (2021 PPP) threshold, it has reduced from 80% (1947) to 5.3% in 2025 (World Bank estimates).
- **Literacy:** Increased from 18.3% (1951) to 77% (2023).
- **Life expectancy:** From 32 years (1947) to 72 years (2023).
- **Women's empowerment:** Significant strides in education, socio-economic-political participation, and leadership.

Agriculture and Food Security:

- **Foodgrain production:** Foodgrain production has multiplied sevenfold, from 50 MMT (1947) to 353.9 MMT (2024-25).
- **Exports:** World's largest rice exporter (20.2 MMT in FY25). Horticulture, milk, egg production have multiplied many times.
- **Self-sufficiency:** India is a net exporter of agriculture, unlike the US and China.

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- **Challenges:** Though India has achieved food security, there are still many challenges, for example, nutritional security, especially of children under the age of five, remains pressing.

Technology, Science and Space Achievements:

- **Space exploration:** From Chandrayaan's historic landing near the Moon's South Pole to the trailblazing Mars mission (Mangalyaan), India has staked its place at the frontiers of space exploration.
- **Digital revolution:** The meteoric rise of the Unified Payments Interface (UPI), processing over 10 billion transactions each month and inspiring fintech innovations worldwide, reflects a digital revolution.
- **Global leadership:** Indian-origin CEOs (such as Sundar Pichai, Satya Nadella, Indra Nooyi) lead global corporations (Google, Microsoft, PepsiCo).

India in the Global Context:

- **Comparisons:**
 - China's **per capita income** in 2025 is \$13,690 (PPP \$28,980), while India is at \$2,880 (PPP \$12,130).
 - However, for India, **democracy remains its compass/ strength**, setting it apart from its neighbours.
- **Global relevance:** India has lessons for many countries in Asia and Africa, and in many high-tech sectors, it competes with the best.

Vision for Viksit Bharat @ 2047:

- **Core pillars:**
 - Accelerating inclusive growth.
 - Cutting bureaucratic hurdles.
 - Strengthening scientific culture.
 - Sustainable development with environmental safeguards.
 - **Aim:** To establish India as a developed nation (Viksit Bharat) by its centenary of independence (2047).
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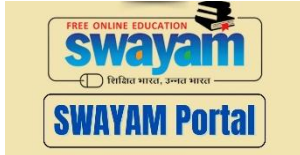
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SWAYAM PORTAL



- SWAYAM (Study Webs of Active–Learning for Young Aspiring Minds) is India’s own MOOCs (Massive Open Online Course) platform of the Ministry of Education (MoE) initiative and was launched during 2017.
- It seeks to **bridge the digital divide** for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.
- It is an indigenously developed IT platform that facilitates **hosting of all the courses** taught in classrooms **from Class 9 till post-graduation to be accessed by anyone, anywhere**, at any time.
- All the **courses are interactive, prepared by the best teachers** in the country, and are **available, free of cost**, to the residents in India.

What is offered in SWAYAM?

- Courses that are taught in classrooms **from 9th class till post-graduation**.
- The courses hosted on SWAYAM are in **4 quadrants**:
 - **video lecture**
 - **specially prepared reading material** that can be downloaded/printed
 - **self-assessment tests** through tests and quizzes and
 - an **online discussion forum** for clearing the doubts.
- Categories of courses include - **Engineering, Science, Humanities, Management, Language, Mathematics, Arts and Recreation, Commerce, General, Library, Education.**
- Courses delivered through SWAYAM are **available free of cost** to the learners.



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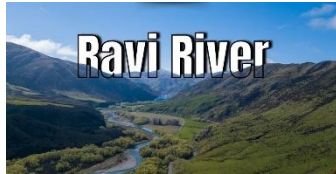
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KEY FACTS ABOUT RAVI RIVER



- It is a river in northwestern **India** and northeastern **Pakistan**.
- It is one of the **five tributaries of the Indus River** that give **Punjab** (meaning “Five Rivers”) its name.

Course:

- It **originates** from the northern face of **Rohtang Pass** in **Himachal Pradesh** and flows through the junction formed by the **BaraBang-Dhauladhar range** of the Himalayas as two channels, namely Budhil and Tantgari.
- After joining, it **flows through Himachal Pradesh, mainly the Chamba district**, where it receives many tributaries.
- From there, it **flows southwards** through India, **crossing through Punjab before crossing into Pakistan**, where it finally **merges with the Chenab River**, a major tributary of the Indus River.
- The **length of Ravi River in India is 320 km** and has a catchment area of 14,442 sq.km
- The **hydrology of the Ravi is controlled by spring snowmelt and the South Asian monsoon** that brings heavy rains from June to September.

It has several **tributaries**, including the **Siul, Baira, and Ujh rivers**.

- The Ravi River has **several dams**, primarily for hydropower generation and irrigation.
 - The major ones include the **Ranjit Sagar Dam** (also known as **Thein Dam**) and the **Chamera Dam complex** (Chamera I, II, and III).
 - The **Indus Water Treaty of 1960** between India and Pakistan **allocated the Ravi River, along with the Beas and Sutlej rivers, to India**.
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ALMOND CULTIVATION



- Almonds are one of the major and oldest **tree nut crops** in the world.
- There are **two types of almonds available**: Sweet almond and bitter
- **Required Climatic Conditions**
 - **Climate**: Colder regions' climate is suitable for almond farming.
 - **Temperature**: Temperature **ranging between 7°C to 24°C** is considered appropriate.
 - **Soil**: **Deep, loamy, well drained soils** are ideal for almond growing.
 - **Rainfall**: Average rainfall needed is 75 to 110 cm.
- Almond plants can grow easily at an altitude of **750 to 3200 meters above sea level**.
- **Major Almond farming Countries**: USA, Australia, Spain, Turkey
- **Major Almond farming states**: In India Almond cultivation is mainly done in the hilly parts of colder regions, mainly in **Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Kerala** and some hilly regions of **Andhra Pradesh**.
- **Uses**: Almonds are used for various purposes like in **sweets, milk, nuts** used in the food and used in producing oils.
- **Challenges**: Erratic weather patterns, limited access to modern farming techniques, competition from lower-cost imports, shrinking farmlands, and a lack of policy support from authorities.



JELLYFISH

- It is a resilient gelatinous **zooplankton** of the phylum **Cnidaria**.



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- It is a **highly adaptable marine organism** with **simple anatomy**, stinging tentacles and efficient jet propulsion.
 - **Characteristics of Jellyfish**
 - It is a simple **invertebrate**, members of the phylum Cnidaria, which includes creatures such as sea anemones, sea whips, and corals.
 - The body parts of a **jellyfish radiate from a central axis**. This “radial symmetry” allows jellyfish to detect and respond to food or danger from any direction.
 - They are pretty simple, **lack brains, blood, or even hearts**.
 - **Anatomy:** They are composed of three layers: an outer layer, called the **epidermis**; a middle layer made of a thick, elastic, jelly-like substance called **mesoglea**; and an inner layer, called the
 - Jellyfish have the ability to **sting with their tentacles**.
 - **Ecological Impact:** These blooms disrupt marine ecosystems by **reducing biodiversity**, outcompeting native species and collapsing fish and invertebrate populations.
 - **Reasons for Jellyfish’s Bloom**
 - **Global warming** has led to **higher ocean temperatures**, which, in turn, has **resulted in the surge of plankton** — the primary food source of jellyfish. With an abundance of food available, jellyfish have been able to **increase their population substantially**.
 - **Overfishing:** Recently various kinds of species, such as tuna and sea turtles, that prey on jellyfish have been removed from the ecosystem. These species also feed on plankton, and with their **reduced population, jellyfish have more plankton to consume and thrive unchecked**.
 - **Plastic Pollution:** Unlike other marine creatures, **jellyfish can tolerate low oxygen levels** in water, which is a consequence of pollution. This has also contributed to the increase in their population in recent years.
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INDIA TO LAUNCH FIRST SUSTAINABLE AVIATION FUEL (SAF) PLANT

- SAF is a bio-based alternative to conventional jet fuel, produced from renewable feedstocks such as used cooking oil, agricultural residues, forestry waste, and non-edible crops.
- SAF is a “drop-in fuel,” meaning it can be blended with existing jet fuel and used in current aircraft engines without modification.
- International aviation bodies certify blending limits (usually up to 50%) to ensure safety and performance.

Benefits of Sustainable Aviation Fuel (SAF)

- **Engine and infrastructure compatibility** - SAF blended with conventional Jet A can be used in existing aircraft and infrastructure.
- **Fewer emissions** - Compared with conventional jet fuel, 100% SAF has the potential to reduce greenhouse gas emissions by up to 94% depending on feedstock and technology pathway.
- **More flexibility** - SAF is a replacement for conventional jet fuel, allowing for multiple products from various feedstocks and production technologies.
- **Energy Security** – It reduces dependence on imported crude oil.
- **Economic Opportunities** – It Creates new markets for farmers (through non-edible crops and residues) and waste collectors (used cooking oil, biomass).
- **Exports:** With Europe already enforcing SAF blending mandates, **European airlines** are seen as the first major buyers of IOC’s SAF when they land in India. IOC also plans to tap into **global export markets** as demand rises.

IOC’s First Commercial SAF Plant

- IOC will begin **commercial production of SAF** at its Panipat refinery. The plant is certified under **ISCC CORSIA standards**.

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- IOC is the first Indian company to receive ISCC CORSIA certification, a requirement under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).
 - From 2027, airlines worldwide must offset emissions beyond 2020 levels, and using SAF blends will be a key compliance pathway.
 - It will produce **35,000 tonnes of SAF annually** using **used cooking oil (UCO)**.
 - UCO refers to edible oils and fats that have been used for frying, cooking, or food preparation in both commercial and household settings.
 - It is essentially leftover oil from cooking processes.
 - While UCO can be a sustainable feedstock for biodiesel and other products, its improper disposal can lead to environmental and health issues.
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IMPACT OF ETHANOL BLENDING IN INDIA

- India has achieved its ambitious target of blending 20% ethanol with petrol (E20) five years ahead of schedule, marking a major milestone in its clean energy transition.
- Ethanol blending, part of the **National Policy on Biofuels**, has grown from just 1.5% in 2014 to 20% in 2025, driven by strong government incentives.
- While hailed as a step toward **energy security, reduced oil imports, and farmer welfare**, it has also sparked debates over its impact on vehicle performance, groundwater sustainability, and India's long-term transition to electric mobility.

Ethanol Blending and Vehicle Owners

- From April 2023, vehicles in India have carried E20 compatibility stickers. However, acceptance among consumers has been limited.
 - A **LocalCircles survey** covering 36,000 respondents found that two in three petrol vehicle owners opposed the E20 mandate, citing **reduced mileage and higher maintenance costs**.
 - Automakers such as Hero MotoCorp have acknowledged the need for **new materials (rubbers, elastomers, plastics)** to make engines E20-compatible.

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Economic and Fiscal Impacts

- One of the key justifications for ethanol blending has been its role in reducing India's oil import bill:
 - Since 2014-15, ethanol substitution has saved **Rs. 1.40 lakh crore in foreign exchange**.

Impact on Agriculture and Environment

- Ethanol blending has opened a steady revenue stream for farmers, especially sugarcane growers:
 - Ethanol production grew from **40 crore litres in FY14 to nearly 670 crore litres in FY24**, with about 9% of sugar output diverted to fuel.
- However, concerns persist about the environmental cost:
 - **Sugarcane cultivation** requires **60-70 tonnes of water per tonne of crop**, leading to excessive groundwater extraction, especially in drought-prone Maharashtra.
- The government is now diversifying ethanol sources:
 - Food Corporation of India allocated **5.2 million tonnes of rice** for ethanol in 2024-25. **34% of corn output** was diverted, forcing a surge in **corn imports (9.7 lakh tonnes in 2024-25)**.

Future Outlook

- While the Petroleum Ministry has indicated plans to pursue **blending beyond 20%**, the Union government clarified in March 2025 that no formal decision has been taken.
 - Policymakers face a delicate balance between:
 - Supporting farmers and energy independence through ethanol.
 - Addressing the environmental costs of water-intensive sugarcane.
 - Accelerating the shift to EVs for deeper decarbonisation.
 - India's ethanol success is undeniable, but the challenge lies in ensuring that its gains are not offset by ecological and consumer costs.
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