

# Factly Weekly

**Compilation**

2023

**For UPSC CSE Prelims  
Exam**

**4<sup>th</sup> Week**

**September 2024**

**INDEX**

<b>UPSC Syllabus: International organization</b> .....	<b>2</b>
Summit of the Future .....	2
L69 Grouping and G4 Grouping.....	3
<b>UPSC Syllabus: Environment</b> .....	<b>4</b>
Status of Rhino around the world.....	4
Commission for Air Quality Management .....	5
Ek Ped Maa Ke Naam campaign.....	6
<b>UPSC Syllabus: Polity and nation</b> .....	<b>7</b>
Supreme Court’s Verdict on Child Sexual Exploitative and Abuse Material (CSEAM).....	7
What is Retractions in Scientific Literature?.....	8
<b>UPSC Syllabus: Science and technology</b> .....	<b>8</b>
India’s First Venus Mission .....	8
<b>Neutrino fog</b> .....	<b>10</b>
Why in the News?.....	10
PARAM Rudra Supercomputer .....	11
Radio Jet and Interstellar Gas .....	12
WAVES Anime & Manga Contest (WAM!) .....	13
Council of Scientific & Industrial Research (CSIR) .....	14
<b>UPSC Syllabus: Indian Economy</b> .....	<b>15</b>
India Sugar & Bio Energy Conference .....	15
National Credit Framework (NCrF) .....	17
Spices Board .....	18
<b>UPSC Syllabus: Schemes and programmes</b> .....	<b>20</b>
Seva Se Seekhen Program.....	20
Create in India’ Initiative .....	21
Paryatan Mitra & Paryatan Didi Initiative .....	23
World Tourism Day 2024 .....	24
<b>UPSC Syllabus: Index and Reports</b> .....	<b>25</b>
Global Innovation Index (GII) 2024.....	26
<b>UPSC Syllabus: World Geography</b> .....	<b>27</b>
Taiwan Strait.....	27

## UPSC Syllabus: International organization

### Summit of the Future

#### Why in News?

Recently, the Prime Minister addressed the 'Summit of the Future' at the United Nations, New York. The theme was 'Multilateral Solutions for a Better Tomorrow'.

#### Key Highlighted points

- 1. Global Peace and Development Vision:** India's role in emphasizing global pursuit of peace, development, and prosperity has been highlighted. It was also highlighted that India advocates a human-centric approach to building a brighter global future.
- 2. Sustainable Development Achievements:** India has made significant progress in lifting 250 million people out of poverty in the past decade, showcasing its success in sustainable development.
- 3. Solidarity with the Global South:** It was emphasized that India has solidarity with the Global South.
- 4. Safe and Responsible Use of Technology:** India called for balanced regulations to ensure the safe and responsible use of technology. It also emphasized that India's digital public infrastructure is available to be shared for the greater public good.
- 5. Commitment to 'One Earth, One Family, One Future':** India's dedication to the guiding principle of "One Earth, One Family, One Future" in shaping a sustainable and inclusive future was reaffirmed.
- 6. Call for Global Governance Reform:** It was urged for urgent reforms of global governance institutions, including the UN Security Council to ensure they remain relevant. It was stressed that global action must align with global ambition to address current and future challenges.
- 7. Summit Outcome:** The Summit concluded with the adoption of an outcome document titled A Pact for the Future' along with two annexes: Global Digital Compact and Declaration on Future Generations.

#### About Summit of the Future

- 1. Organized by:** The Summit of the Future is a key event organized by the United Nations (UN) to address global challenges and promote long-term multilateralism.
- 2.** This summit is aimed at shaping a more equitable, resilient, and sustainable global future by focusing on issues like climate change, peace and security, technology, and sustainable development.
- 3. Purpose:** The summit seeks to strengthen global cooperation and reform international systems to address modern challenges.
- 4. Goals:** The summit focuses on bridging inequalities and building resilience against global crises such as pandemics, climate change, and economic instability.
- 6. Participants:** Heads of state, government leaders, international organizations, civil society, academics, and the private sector are involved.

## L69 Grouping and G4 Grouping

### Why in News?

The United Nations will celebrate its 80th anniversary next year. The G4 nations and other groupings such as L69 and C-10 called for urgent reforms to the UN Security Council.

### About L69 Grouping

**1. About:** The L69 Group is a coalition of 42 developing countries from Africa, Latin America and the Caribbean, Asia, and the Pacific.

**2. Formation:** It was formed in 2007. The group is named after a draft resolution (L.69) that was submitted to the UN General Assembly.

**3. Focus:** These nations have a common interest in pushing for reform in the UNSC, particularly to enhance representation for developing countries.

**4. Advocacy:** The L69 advocates for:

- a) a more representative and inclusive Security Council
- b) strengthening the role of developing countries, especially from Africa
- c) lacking the Common African Position(CAP) based on the **Ezulwini Consensus** and **Sirte Declaration** which calls for no less than two permanent seats for Africa with full veto power, and increased non-permanent seats.

### About G4 Grouping

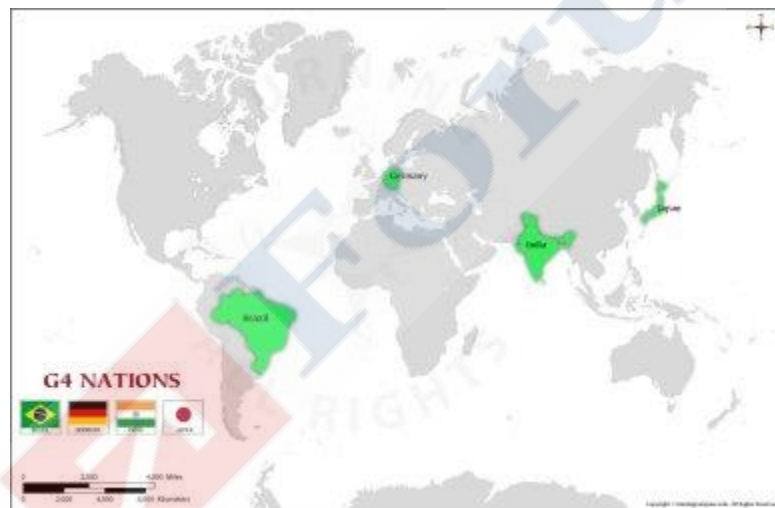


Figure 1.Source: Burningcompass

**1. About:** The G4 is a coalition of four nations: **India, Brazil, Germany,** and **Japan** seeking permanent membership in the United Nations Security Council. It was formed in the 2005.

2. The G4 countries are economically influential and significantly contribute to international peace and security, which they believe justifies their inclusion as permanent members of the UNSC.

**3. Objectives:** Key objectives of the G4 include:

- a) Expansion of both permanent and non-permanent categories of UNSC membership, allowing for more equitable representation.
- b) Securing permanent membership for themselves, while supporting reforms that would also enhance the representation of Africa, Asia-Pacific, and Latin America in the Council.
- c) Addressing the stagnation in the Intergovernmental Negotiations (IGN) process on Security Council reform and pushing for the start of text-based negotiations to expedite the reform process.

## UPSC Syllabus: Environment

### Status of Rhino around the world

#### Why in News?

According to a report by the International Rhino Foundation, the worldwide rhino population has experienced a slight rise.

#### Status of Rhino around the world

1. The white rhino population grew from 15,942 in 2022 to 17,464 in 2023.
2. Populations of black rhinos and the greater one-horned rhino have remained stable.
3. Overall, there are now fewer than 28,000 rhinos left globally, a significant decline from 500,000 in the early 20th century.

#### Threats to Rhino Population

1. The northern white rhino is functionally extinct, with only two females left in a Kenyan conservancy.
2. Despite population growth, the threat of poaching has intensified. In 2023, 586 rhinos were killed in Africa, with most deaths occurring in South Africa, which has the highest rhino population at 16,056.
3. Poaching increased from 551 rhinos killed in 2022, driven by demand for rhino horns believed to have medicinal properties.
4. Besides poaching, rhinos face environmental challenges such as habitat loss due to development and climate change.

#### Ecological Importance of Rhinos

1. Rhinos are considered “umbrella species,” meaning that efforts to protect them also help conserve other wildlife and their habitats.
2. Rhinos play a critical role in maintaining ecosystems by acting as “mega herbivores.” They help create pathways for other animals and support forest regeneration through seed dispersal.

#### About Rhinoceros

1. Rhinoceroses are large, herbivorous mammals belonging to the family Rhinocerotidae.
2. **Species:** Five species are majorly found around the world– White, Black, Indian, Javan, and Sumatran rhinos.
3. **Habitat:** Primarily found in grasslands, savannas, and forests in Africa and Asia.
4. **Physical Characteristics:** They are large, robust animals. They can weigh between 1,000 to 2,300 kg (2,200 to 5,000 lbs). Their horns are made of keratin, with one or two horns depending on the species.
5. **Diet:** Rhinos are herbivores, with diets consisting mostly of leafy plants, branches, shoots, fruits, and grasses.
6. **Threats:** Major threats include poaching for horns and habitat loss due to human encroachment.

**7. Conservation Efforts:** Protected areas, anti-poaching laws, and breeding programs are critical for their survival.

Read more: [State of the Rhino Report, 2023](#)

### Commission for Air Quality Management

#### Why in News?

The Supreme Court expressed dissatisfaction with the CAQM's measures to control pollution, particularly in Delhi. It directed the CAQM to file a detailed status report specifically addressing the issue of stubble-burning and actions taken against violators.

#### About Commission for Air Quality Management in the National Capital Region and Adjoining Areas Act, 2021

Aspects	Description
<b>About</b>	<ol style="list-style-type: none"><li>1. It was enacted to address the severe air pollution in the National Capital Region (NCR) and adjoining areas.</li><li>2. The Act provides special provisions to address stubble burning. The Commission is authorized to implement and monitor strategies to prevent and reduce stubble burning in agricultural fields.</li></ol>
<b>Establishment of the Commission</b>	<ol style="list-style-type: none"><li>1. The Act establishes the Commission for Air Quality Management in the NCR and adjoining areas as a statutory body with powers to take comprehensive measures to curb air pollution.</li><li>2. The Commission is headquartered in the NCR and is empowered to set up offices in adjoining areas.</li></ol>
<b>Composition</b>	The Commission consists of a Chairperson, Secretary, and other members including experts from fields such as environment, public health, agriculture, and meteorology.
<b>Jurisdiction</b>	The Commission's jurisdiction extends to the National Capital Region (NCR), which includes Delhi and parts of Haryana, Uttar Pradesh, and Rajasthan, as well as any other adjoining areas that may be notified by the central government.
<b>Powers and Functions</b>	<ol style="list-style-type: none"><li>1. The CAQM has the power to monitor, coordinate, and regulate activities contributing to air pollution.</li><li>2. It can formulate policies, issue directives, and provide guidelines to curb sources of air pollution like industrial emissions, vehicular pollution, stubble burning, construction activities, and road dust.</li><li>3. It can also impose fines and penalties on polluters and violators of environmental regulations</li></ol>
<b>Overriding Powers</b>	The CAQM has overriding authority over other bodies such as the Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs) within its jurisdiction, with the aim of ensuring coordinated efforts to tackle pollution.

## Factly Compilation September (Fourth Week) 2024

<b>Advisory and Coordination Role</b>	The Commission advises central and state governments on air quality. It also coordinates with state authorities, agencies, and local bodies to enforce environmental laws and implement air quality improvement measures.
<b>Penalties</b>	Any person who fails to comply with the Commission's orders or violates provisions of the Act can face <b>**penalties**</b> , including fines and imprisonment.

### Ek Ped Maa Ke Naam campaign

#### Why in News?

The Ministry of Environment, Forest and Climate Change has successfully met the target of planting 80 crore saplings under the 'Ek Ped Maa Ke Naam' campaign. The target, originally set for completion by September 2024, was achieved five days ahead of schedule.

#### About the Campaign

Plantation recorded on ManUP portal under Ek Ped Maa Ke Naam campaign

State/UT	Target by September 2024 (in Lakhs)	Target for 2024-25 (in Lakhs)	Number of seedlings planted (in Lakhs)
1 Andaman and Nicobar (AN)	15.00	21	13,244.70
2 Andhra Pradesh (AP)	790.00	1300	3,36,109.00
3 Arunachal Pradesh (AR)	27.00	45	47,056.64
4 Assam (AS)	50.00	70	317,324.28
5 Bihar (BR)	290.00	400	346,293.26
6 Chandigarh (CH)	1.00	2	2,665.98
7 Chhattisgarh (CG)	180.00	275	204,507.05
Dadra and Nagar Haveli (DN) & Daman and Diu (DD)	2.00	5	5,976.64
8 Delhi (DL)	30.00	60	2,209.26
9 Goa (GA)	1.00	2	5,394.65
10 Gujarat (GU)	1,220.00	1700	19,48,001.30
11 Haryana (HR)	100.00	160	119,905.52
12 Himachal Pradesh (HP)	96.00	160	8,617.96
13 Jammu and Kashmir (JK)	70.00	150	12,780.64
14 Jharkhand (JH)	160.00	255	72,400.59
15 Karnataka (KA)	270.00	410	42,574.15
16 Kerala (KL)	15.00	25	11,650.08
17 Ladakh	4.00	7	4,556.66
18 Lakshadweep (LD)	1.50	3	0,514.87
20 Madhya Pradesh (MP)	380.00	500	441,301.05
21 Maharashtra (MH)	275.00	430	177,540.89
22 Manipur (MN)	30.00	50	30,744.64
23 Meghalaya (ML)	4.00	8	0,291.63
24 Mizoram (MZ)	20.00	39	3,072.19
25 Nagaland (NL)	25.00	35	34,523.25
26 Odisha (OD)	400.00	650	430,734.85
27 Puducherry (PY)	1.50	3	0,079.18
28 Punjab (PB)	90.00	160	94,451.39
29 Rajasthan (RJ)	150.00	300	549,651.94
30 Sikkim (SK)	15.00	25	12,331.72
31 Tamil Nadu (TN)	42.00	472	4,381.05
32 Telangana	400.00	1300	837,992.22
33 Tripura (TR)	60.00	90	33,879.08
34 Uttar Pradesh (UP)	2,575.00	3900	2647,338.81
35 Uttarakhand (UK)	150.00	250	82,952.87
36 West Bengal (WB)	150.00	180	3,458.08
<b>Total</b>	<b>8000</b>	<b>14000</b>	<b>8084,720.69</b>

Figure 2. Source: PIB

**1. About:** The campaign was initiated by the Prime Minister on World Environment Day, 5th June 2024.

**2. Led by:** Ministry of Environment, Forest and Climate Change in collaboration with State Governments and Union Territories

**2. Objective:** The campaign encouraged citizens to plant a tree in honour of their mothers, promoting both ecological conservation and familial respect.

**3. Aim:** It aims to plant 80 Crore trees by September 2024 and **\*\*140 Crore trees\*\*** by March 2025.

**4. Strategy:** The campaign adopts a "Whole of Government" and "Whole of Society" strategy, involving citizens, communities, and local administrations in a collective effort to rejuvenate India's green cover.

**5.** The campaign often involves the distribution of saplings, awareness drives, and events where participants plant trees in honor of their mothers.

**6.** It is part of a broader movement to integrate environmental consciousness with personal and cultural values.

**7.** The achievement was made possible through the collective efforts of various government agencies, village-level institutions, local communities, and stakeholders.

**8.** The campaign also focused on halting land degradation and restoring degraded land parcels through large-scale tree plantation efforts.

## UPSC Syllabus: Polity and nation

### Supreme Court's Verdict on Child Sexual Exploitative and Abuse Material (CSEAM)

#### Why in News?

In a recent judgement, the SC ruled that viewing, downloading, storing, distributing, or displaying pornographic acts involving children is a criminal offense under the Protection of Children from Sexual Offences (POCSO) Act and the Information Technology (IT) Act.

#### Supreme Court Judgment:

1. The Court highlighted that the sexual abuse of a child is just the beginning of their victimization, and the recording, circulation, and viewing of these acts in cyberspace perpetuate the trauma.
2. Viewing CSEAM is equated with the act of child sexual abuse due to the shared malicious intent of sexual exploitation and degradation.
3. **Constructive Possession and Criminal Liability:** The court introduced the concept of “constructive possession,” holding that individuals can be criminally liable if they had control over CSEAM, even if they deleted it later. Offenders should not evade liability through tactics like deleting child pornographic materials after viewing.
4. **Possession and Intent to Transmit:** The Court ruled that even the mere storage of such material, without deleting it, constitutes possession and intent to transmit, disagreeing with attempts to argue otherwise.

#### Supreme Court Directions:

1. **Use of the Term CSEAM:** Courts across India are directed to use the term “Child Sexual Exploitative and Abuse Material” (CSEAM) in place of “child pornography” in all judicial orders.
2. **Amendment to POCSO Act:** The Supreme Court called upon Parliament to amend the POCSO Act to officially replace the term “child pornography” with CSEAM. Meanwhile, it recommended that the government promulgate an ordinance to implement this change.
3. **Reporting Suspicious Materials:** The Court advised that automatic downloads or suspicious links should not only be closed but reported to the authorities for further investigation.

#### Legal Framework

1. Section 15 of the POCSO Act criminalizes the storage and possession of child pornography (now referred to as CSEAM).
2. Section 67B of the IT Act penalizes the use, transmission, and publication of obscene materials involving children, including viewing and browsing such content.



## What is Retractions in Scientific Literature?

### Why in News?

The 'Retraction Watch' database recently revealed that an Indian scientist at a Lucknow institute has faced 45 retractions.

### About Retractions

1. A retraction occurs when a published scientific paper is found to contain significant flaws and is removed from academic literature.
2. Honest errors may lead to a retraction, but deliberate misconduct, such as manipulation or falsification is viewed much more harshly by the academic community.
3. **About the Retraction Index:** A journal's retraction index is calculated by multiplying the number of retractions by 1,000 and dividing it by the total number of published articles. High-impact journals are more likely to retract papers compared to low-impact journals, indicating a greater focus on quality and scrutiny.

**Retraction Incidence:** Between 2020 and 2022, there was a 2.5-fold increase in retractions compared to 2017-2019. Scientific misconduct erodes trust within the scientific community, with many researchers feeling victimized by those who engage in fraud, as it undermines the credibility of legitimate research.

### Reasons Behind Falsified Research

1. Paper mills produce low-quality or fake research papers, sell them to scientists aiming to inflate their publication count.
2. These operations, often traced to countries like Russia, Iran, and China contribute to the rise of falsified scientific research.
3. The demand is driven by pressure to publish for career advancement, securing grants, or completing PhD programs, as well as institutions' efforts to improve global rankings based on research output.

**Potential Solutions:** Reducing research misconduct requires policy changes, including the development of AI tools to detect fake papers and the creation of better evaluation methods that prioritize research quality over quantity.

## UPSC Syllabus: Science and technology

### India's First Venus Mission

#### Why in News?

Recently, the Union Cabinet approved ISRO's plan to launch India's first mission to Venus, scheduled for March 2028.

#### About the Venus Mission



Source: IE

Aspects	Description
About	It is planned to be launched in March 2028. This will be India's second interplanetary mission, following the successful Mars Orbiter Mission in 2013.
Aim	To study Venus from orbit, focusing on the planet's surface, sub-surface, atmosphere, ionosphere, and its interaction with the Sun.
Key features	<ol style="list-style-type: none"> <li>1. The mission will carry around 100 kilograms of scientific instruments, including contributions from international collaborators.</li> <li>2. After launch, the spacecraft will slingshot towards Venus, reaching the planet in approximately 140 days. Upon arrival, it will enter a highly elliptical orbit of 500 km by 60,000 km around Venus.</li> <li>3. One of the mission's groundbreaking aspects is the use of aerobraking. It is a first for India.</li> </ol> <p>This process involves skimming the spacecraft through the outer layers of Venus' atmosphere to create drag, thereby reducing its orbit.</p>
Payloads	<ol style="list-style-type: none"> <li>1. The mission's payload includes a synthetic aperture radar, which will image Venus' surface using L and S band radar, and a thermal camera to study temperature variations.</li> <li>2. Additionally, an interplanetary dust experiment will analyze dust particles, and instruments designed to study the atmosphere will measure its composition, structure, and variability, as well as its ionization.</li> </ol>
International Collaboration	By 2019, 17 Indian experiments and seven international experiments were selected for the mission.

Importance of Studying Venus	Venus is often called Earth's twin due to its similar mass, size, and density. Studying Venus may provide insights into Earth's evolution.
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### About Venus

- 1. About:** Venus is the second planet from the Sun and is often referred to as Earth's "sister planet" due to its similar size and mass.
- 2. Composition:** Venus has a thick atmosphere composed primarily of carbon dioxide, with clouds of sulfuric acid.
- 3. Temperature:** Surface temperature of 462°C—hotter than Mercury despite being farther from the Sun. The surface pressure is about 92 times that of Earth, equivalent to the pressure found about 900 meters underwater on Earth.
- 4. Geology:** The surface of Venus is rocky and volcanic. It is dotted with mountains, vast plains, and large impact craters. Venus has many volcanoes, some of which may still be active, and large lava flows are evident on its surface. Notable features include Maxwell Montes, the highest mountain, and a large plateau called Ishtar Terra.
- 5. Rotation:** Venus has a unique rotation in the solar system. Venus rotates very slowly, with one rotation taking 243 Earth days.

Read more: [Venus Orbiter Mission](#)

## Neutrino fog

### Why in the News?

Recently, the LUX-ZEPLIN (LZ) experiment highlighted that as they advance the search for dark matter the challenge of neutrino fog has become more prominent.

### About Neutrino fog

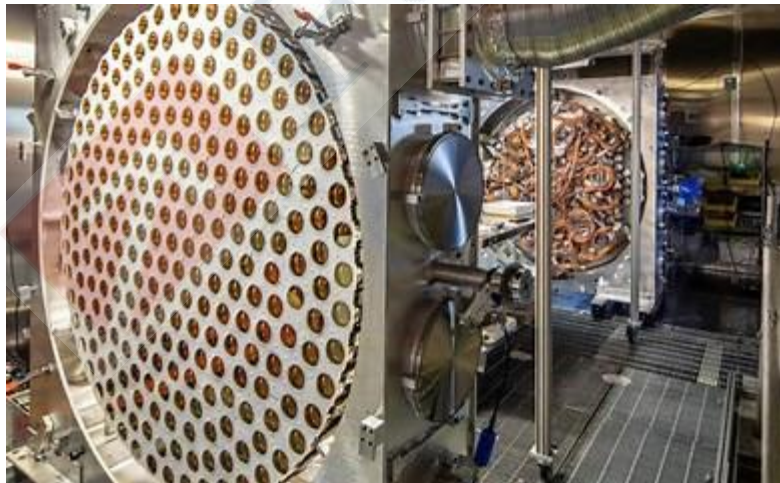


Figure 3. Source: TH

1. Neutrinos are tiny, ghost-like particles that pass through almost everything, including us, without being noticed. They are extremely difficult to detect because they barely interact with matter.
2. They are produced in huge numbers by the Sun and the Earth's atmosphere.
3. In future dark matter detectors, neutrinos will create a lot of "noise" by scattering off nuclei, which complicates the detection of dark matter. This noise is called "**neutrino**

fog.”

4. As dark matter detectors grow in size and sensitivity, they are increasingly likely to detect neutrinos, creating a “fog” of signals that can obscure or resemble potential dark matter interactions.
5. The presence of neutrino fog limits how much more sensitive dark matter detectors can become, as they will begin to register more neutrino interactions than dark matter ones.

## PARAM Rudra Supercomputer

### Why in News?

Recently, Prime Minister Shri Narendra Modi inaugurated PARAM Rudra Supercomputer at S.N. Bose National Centre for Basic Sciences (SNBNCBS).

### About PARAM Rudra Supercomputer

Aspects	Description
About	<ol style="list-style-type: none"><li>1. The PARAM Rudra supercomputer was inaugurated at the S.N. Bose National Centre for Basic Sciences (SNBNCBS) in Kolkata.</li><li>2. This high-performance computing facility will benefit approximately 10-12 institutions and thousands of researchers in the Eastern Region of India.</li><li>3. Institutions like Bose Institute, Saha Institute of Nuclear Physics (SINP), Indian Institute of Chemical Biology (IICB), and IISER Kolkata will collaborate using this advanced facility.</li></ol>
Developed by	It is developed under the National Supercomputing Mission (NSM), a joint initiative of the Ministry of Electronics and IT (MeitY) and the Department of Science and Technology (DST).
Aim	It is aimed at revolutionizing research across multiple domains including advanced materials, high-energy physics, earth sciences, cosmology, and biological sciences.
Features	<ol style="list-style-type: none"><li>1) The supercomputer is designed with an 838 TFLOPS computing power. It will accelerate high-throughput Computational Materials Design.</li><li>2) It will facilitate the rapid identification and development of new materials, enhancing research in material science.</li><li>3) It will also support Computational Modelling of Earth and Planetary Materials.</li><li>4) It integrates first-principles calculations with Laser Heated Diamond Anvil Cell (LHDAC) experiments for better understanding of planetary compositions.</li><li>5) It will model the universe’s structure, including gravitational waves, high-energy photons, and astrophysical neutrinos.</li><li>6) The supercomputer will aid high-energy astrophysics research, particularly in studying dense matter, as part of the ALICE experiment at CERN.</li></ol>

Significance	<p><b>1) Self-Reliance in High-Performance Computing:</b> The PARAM Rudra supercomputer symbolizes India's commitment to self-sufficiency in advanced computing technology.</p> <p><b>2) Empowering Scientific Innovation:</b> It equips Indian researchers with essential tools to drive global innovation and make significant contributions across various scientific fields.</p> <p><b>3) National Advancement and Quality of Life:</b> The supercomputer will enhance research, improve quality of life, and play a crucial role in shaping India's future across industries and scientific domains.</p> <p><b>4) Enhanced Climate Prediction:</b> It will improve India's ability to predict weather and climate phenomena, aiding in environmental sustainability and disaster preparedness.</p> <p><b>5) Advancements in Medical Research:</b> By enabling machine learning studies of biomolecular functions, PARAM Rudra will help researchers better understand diseases and develop new treatments.</p>
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## Radio Jet and Interstellar Gas

### Why in News?

Researchers from the Indian Institute of Astrophysics (IIA) have found evidence of an interaction between a radio jet emitted from a special kind of galaxy called Active Galactic Nuclei (AGN) and the surrounding interstellar medium. This interaction has been detected for the first time in a dwarf galaxy situated at a distance of about 14 million light years.

### About Radio jets

Radio jets in astrophysics refer to **high-energy streams of charged particles ejected from the regions surrounding supermassive black holes**, often located at the centre of galaxies.

These jets are typically observed at radio wavelengths and are thought to be produced by the interaction between the black hole's magnetic field and the accretion disk, which channels material into narrow beams.

### About Interstellar gas

**Interstellar gases are composed mainly of hydrogen and helium.** It exists between stars in galaxies and serves as the medium through which radio jets propagate.

When a radio jet interacts with interstellar gas, it can compress and heat the gas, triggering various effects, including star formation or, conversely, suppressing it by dispersing the gas.

### What happen when radio jets and interstellar gas interacts?

The interaction between radio jets and interstellar gas can be highly dynamic, leading to phenomena like:

**1. Shock Waves:** As radio jets flow through the gas, they generate shock waves, which can compress and heat the surrounding material.

**2. Feedback Mechanism:** Radio jets can either stimulate star formation by compressing gas clouds or inhibit it by heating and dispersing gas, a process known as "**AGN (Active Galactic Nucleus) feedback.**"

**3. Molecular Outflows:** The interaction between jets and interstellar gas can result in the ejection of gas from the galactic center, influencing the galaxy's evolution.

### WAVES Anime & Manga Contest (WAM!)

#### Why in News?

Recently, the Media & Entertainment Association of India (MEAI), in partnership with the Ministry of Information & Broadcasting has officially launched the WAVES Anime & Manga Contest (WAM!).

#### About WAVES Anime & Manga Contest (WAM!)



Figure 4. Source: PIB

develop localized adaptations of popular Japanese art styles, appealing to both domestic and global audiences.

5. The contest seeks to create a powerful platform for artistic expression in manga and anime.

6. Participants can compete either individually or in teams of up to four, with separate categories for students and professionals. The event is divided into two stages: state-level competitions held in eleven cities, followed by a national finale.

1. **Launched by:** The Ministry of Information & Broadcasting (I&B), in collaboration with the Media & Entertainment Association of India (MEAI)

2. It is part of the "Create in India Challenge," aimed at promoting anime and manga culture in India.

3. The initiative seeks to cultivate local talent and tap into India's growing interest in anime and manga, aligning with the "Design in India, Design for the World".

4. WAM! Presents a unique opportunity for Indian creators to

## Council of Scientific & Industrial Research (CSIR)

### Why in News?

The 83rd Foundation Day ceremony of Council of Scientific and Industrial Research (CSIR) was recently held at NASC Complex, Pusa.

### About the Council of Scientific & Industrial Research (CSIR)



Source: CSIR

Aspects	Description
About	The Council of Scientific and Industrial Research (CSIR) was established in 1942.
Operates under	It operates under the Ministry of Science and Technology, Government of India.
Aim	It aims to focus on enhancing national security, fostering green technologies, and addressing societal needs through science.
Vision	<ol style="list-style-type: none"><li>1. CSIR aims to transform India into a global leader in innovation, technology, and industrial competitiveness.</li><li>2. CSIR@2030 envisions improving Indian citizens' quality of life through innovative science, globally competitive R&amp;D, and sustainable solutions, supporting Atmanirbhar Bharat.</li><li>3. CSIR's vision aligns with India's 25-year 'Amrit Kal' plan, marking the centenary of independence.</li></ol>
Outreach	<ol style="list-style-type: none"><li>1. CSIR operates 37 national laboratories, 39 outreach centers, 1 innovation complex, and 3 additional units across India.</li><li>2. It has around 3,476 scientists, supported by approximately 4,000 technical staff</li></ol>

## Factly Compilation September (Fourth Week) 2024

	(as of March 31, 2022).
Area of research	1. CSIR's research spans oceanography, geophysics, chemicals, drugs, genomics, nanotechnology, mining, aeronautics, environmental engineering, and IT. 2. It also addresses issues in environment, health, drinking water, food security, housing, energy, and agriculture.

### Key Functions:

- 1. Scientific Research:** It conducts advanced research across fields like chemistry, biology, physics, and engineering, driving technological innovation.
- 2. Industrial Collaboration:** It bridges industry and academia, promoting technology transfer and entrepreneurship to meet industrial needs.
- 3. National Laboratories:** It oversees 37 national labs, including NPL, CDRI, and NAL, significantly contributing to India's scientific progress.
- 4. Societal Impact:** Through the CSIR-800 program, it develops affordable, sustainable technologies for rural areas, focusing on agriculture, water, energy, and healthcare.
- 5. Innovation:** It plays a key role in India's innovation ecosystem, particularly in pharmaceuticals and healthcare, with numerous patents and technology developments.
- 6. Global Contributions:** It publishes in high-impact journals, holds numerous patents, and engages in international collaborations to address global challenges.

## UPSC Syllabus: Indian Economy

### India Sugar & Bio Energy Conference

#### Why in News?

The Union Minister for Consumer Affairs, Food and Public Distribution and New & Renewable Energy recently addressed the India Sugar & Bio Energy Conference.

#### Key Highlights of the Conference





Source: PIB

- 1. India as a Major Ethanol Player:** India is now the third-largest ethanol producer and consumer globally, driven by government policies.
- 2. Ethanol Blended Petrol (EBP) Programme:** The EBP Programme has increased ethanol production, boosted sugar mill revenues, cut greenhouse gas emissions, and created jobs in rural areas through new distilleries.
- 3. Sustainable Sugar Industry:** The government is committed to a robust sugar industry that aligns with economic growth and renewable energy goals, emphasizing innovation, public-private partnerships, and farmer-centric policies.
- 4. Growth in Sugarcane:** Over the past decade, sugarcane cultivation has increased by 18% and production by 40%. The introduction of the Minimum Selling Price (MSP) in 2018 ensured timely payments to farmers.
- 5. Farmers as Energy Providers:** Farmers are evolving from “Anna Dattas” (food providers) to “Urja Dattas” (energy providers), playing a crucial role in India’s renewable energy ambitions, including net-zero emissions by 2070.
- 6. Biofuel Collaboration with Brazil:** India seeks cooperation with Brazil in biofuels, focusing on technology exchange, R&D, and investment in ethanol, biodiesel, biojet fuel, and green hydrogen.
- 7. Stable Sugar Prices and Positive Outlook:** Sugar prices remain stable, with a favourable production outlook for 2024-2025 due to a good monsoon.
- 8. Sustainable Packaging and Bharat Brand:** India is pushing for global promotion of the “Bharat Brand” and sustainable packaging to strengthen its position as a “Global Food Basket.”

## National Credit Framework (NCrF)

### About National Credit Framework (NCrF)

**Context:** The article discusses the benefits of the National Credit Framework (NCrF) under the National Education Policy (NEP) 2020. It promotes flexibility in education, integrating vocational skills with academic knowledge, and emphasizes adapting higher education to meet India's evolving needs.

For detailed information on **National Credit Framework (NCrF)** read [Article 1](#), [Article 2](#)

### What is the National Credit Framework (NCrF)?

#### 1. National Credit Framework:

2. The National Credit Framework (NCrF) is part of the National Education Policy (NEP) 2020.
3. It provides a flexible system for accumulating and transferring credits across multidisciplinary education.
4. The NCrF is not a regulatory framework but rather an enabling one that aims to provide flexibility in education.

#### 5. Benefits of NCrF

6. NCrF allows students to combine classroom learning with practical skills.
7. Credits can be earned through diverse activities such as research, handicrafts, yoga, and internships.
8. NCrF helps students gain skills relevant to modern job markets.
9. Higher education institutions (HEIs) that adopt the NCrF can bridge the gap between education and the evolving job market.
10. This system ensures that students are prepared for both employment and self-employment by combining knowledge with skill-based learning.

#### 11. Resistance to NCrF

12. Critics believe higher education should focus solely on academic knowledge.
13. They oppose reforms that promote flexibility and skill-based education, seeing it as unsuitable for traditional educational methods.

#### 14. Ultimate Goal of NCrF

15. NCrF aims to balance vocational training with academic knowledge.
16. It promotes continuous adaptation in higher education to meet India's evolving societal and technological needs.
17. By adopting NCrF, HEIs can prepare students for both employment and self-employment.

### Why is flexibility in higher education important?

1. Flexibility in education democratizes learning and promotes social equity.

2. The NCrF supports this by allowing HEIs to balance vocational training and knowledge production. For instance, students in vocational training can have as much impact as those in academic research.
3. This flexible approach enables students to improve their social mobility.

**Why is continuous adaptation essential for HEIs?**

1. The NEP 2020 also proposes the concept of Multidisciplinary Education and Research Universities (MERU).
2. These institutions will serve as hubs for academic scholars and intellectuals.
3. However, the article stresses that many other HEIs should focus on vocational skills, not just academic pursuits, to ensure that students are employable.

**Spices Board**

**Why in News?**

The Spices Board, under the Ministry of Commerce and Industry, has unveiled a comprehensive scheme titled 'Sustainability in Spice Sector through Progressive, Innovative and Collaborative Interventions for Export Development (SPICED)'.

**About Spices Board**



स्पाइसेस बोर्ड  
भारत

Source: Spice board

## Factly Compilation September (Fourth Week) 2024

1. The Spices Board is an autonomous body under the Ministry of Commerce and Industry for the development and worldwide promotion of Indian spices.
2. It was constituted in 1987 under the Spices Board Act 1986 with the merger of the erstwhile Cardamom Board (1968) and Spices Export Promotion Council (1960).
3. The board's primary functions include the regulation of the quality and marketing of spices and the development of spice crops through research, development, and promotion of Indian spices both domestically and internationally.
4. It is responsible for the export promotion of the 52 scheduled spices and development of Cardamom (Small & Large).

### Key Responsibilities:

1. **R&D:** Improves spice cultivation, processing, and packaging through research.
2. **Quality Control:** Maintains international standards and offers certifications.
3. **Export Promotion:** Boosts global spice exports via financial aid and trade events.]
4. **Innovation:** Supports value-added spice products like oils and extracts.
5. **Training:** Provides training on better farming and quality methods.
6. **Market Intelligence:** Shares data on spice production, prices, and trends.

### About SPICED scheme

1. **Launched by:** Ministry of Commerce and Industry

2. **Aim:** The SPICED scheme aims to:

Drive innovation and sustainability in the spice sector.

Improve value addition for spices and spice products.

Enhance the productivity of cardamom (both small and large varieties).

Upgrade post-harvest quality standards of spices.

3. **Duration:** The scheme will be implemented during the 15th Finance Commission cycle, ending in FY 2025-26.

4. **Beneficiary Focus:** The scheme prioritizes assistance to farmers' Groups (FPOs, FPCs, SHGs), SC/ST Communities and SMEs (Particularly from the North-Eastern regions) and Exporters.

### Key Programs Under the Scheme:

1. **Mission Value Addition:** Focuses on enhancing the value-added production of spices for export.

2. **Mission Clean and Safe Spices:** It aims to improve post-harvest processes, ensuring clean, safe, and exportable spices.

3. **Promotion of GI (Geographical Indication) Spices:** It supports branding and marketing of GI-tagged spices both domestically and globally.

4. **Spice Incubation Centres:** It provides support for entrepreneurship through incubation centres, fostering innovation for startups, SMEs, and entrepreneurs in the spice sector.

## UPSC Syllabus: Schemes and programmes

### Seva Se Seekhen Program

#### Why in News?

Recently, the Department of Youth Affairs, Ministry of Youth Affairs and Sports launched the “Seva Se Seekhen” program under the MY Bharat initiative.

#### About Seva Se Seekhen Program



Figure 5. Source: PIB

**1. About:** The “Seva Se Seekhen” program was launched on September 17, 2024. The program encourages youth to engage in meaningful community work and promotes a culture of social responsibility.

**2. Launched by:** Department of Youth Affairs under the MY Bharat initiative.

**3. Aim:** The program aims to engage India’s youth in hands-on learning experiences while providing critical assistance to hospital

patients across the country.

The initiative also aims to boost the utilization of PM-JAY services, improving healthcare accessibility for underprivileged communities.

**4. Focus:** It focuses on fostering a culture of service (seva), empowering young volunteers to contribute to the nation’s healthcare system.

5. 304 Experiential Learning Programs and 2,649 volunteering opportunities have been created. As of now, 1732 volunteers are actively working across 319 hospitals in 24 states and union territories.

**6. Leading States and Volunteer Contributions:** Gujarat leads the program, with 273 volunteers deployed in 33 hospitals. Other states with strong participation include Rajasthan, Haryana, Tamil Nadu, and Uttar Pradesh. Volunteers are playing a vital role in critical healthcare services across these regions.

#### About Mera Yuva Bharat (MY Bharat)

Aspects	Description
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## Factly Compilation September (Fourth Week) 2024

About	It is an autonomous body launched by Prime Minister Shri Narendra Modi on National Unity Day, October 31st, 2023.
Aim	To be a technology-driven facilitator for youth development, helping young people contribute towards a "Viksit Bharat" (Developed India).
Focus	The platform focuses on empowering youth and providing equitable opportunities for leadership, innovation, and community engagement.
Vision	<ol style="list-style-type: none"><li>1. Focus on empowering youth by providing opportunities to help them realize their aspirations.</li><li>2. Engage youth to contribute to the development of India by 2047.</li><li>3. Ensure equitable access for all youth across India to participate in national development programs.</li><li>4. Build a digital and physical (phygital) platform to connect youth with programs, mentors, and their local communities.</li></ol>
Objectives	<ol style="list-style-type: none"><li><b>1. Leadership Development:</b> Build leadership skills through experiential learning, moving from isolated physical activities to skills-based programs.</li><li><b>2. Youth as Social Innovators:</b> Invest in youth to make them leaders and innovators in their communities, encouraging them to address local issues with constructive solutions.</li><li><b>3. Alignment with Community Needs:</b> Align youth aspirations with local community needs, creating a two-way communication system to connect youth with government programs.</li><li><b>4. Convergence of Existing Programs:</b> Integrate various government programs for youth by acting as a one-stop shop, facilitating collaboration between ministries, stakeholders, and young citizens.</li><li><b>5. Centralized Youth Database:</b> Develop a centralized platform to track youth engagement nationwide.</li><li><b>6. Phygital Ecosystem:</b> Create a "Phygital" ecosystem that blends community action with digital platforms to enhance accessibility and engagement.</li></ol>
Key Features of MY Bharat	<ol style="list-style-type: none"><li>1. Beneficiaries are youth in the age group of 10-19 years, while the platform benefits youth aged 15-29 years as per the National Youth Policy.</li><li>2. It is a combination of physical and digital initiatives allows for broad engagement through both online tools and community activities.</li><li>3. It is designed to connect the youth with government programs, leadership initiatives, and mentor-led skill-building opportunities.</li></ol>

### Create in India' Initiative

#### Why in News?

Recently, Ministry of Information and Broadcasting released Create in India' Initiative.

#### About Create in India' Initiative



Source: PIB

- 1. Launched by:** Ministry of Information and Broadcasting
- 2. Aim:** The core aim of 'Create in India' is to encourage Indian businesses, startups, and individuals to develop innovative products, technologies, and services that are globally competitive.
- The Ministry of Information and Broadcasting has introduced 25 challenges to foster talent and creativity across diverse sectors, such as music, education and anti-piracy.
- 4. Focus:** Individuals who are skilled in areas like music, education, and anti-piracy to participate in the challenges. Participants can gain recognition and a larger platform for their creativity.  
Creators, including those in bands or working for community radio were also encouraged to join.
6. This initiative complements the 'Make in India' campaign by emphasizing the need for Indian manufacturers and entrepreneurs not just to produce goods but also to generate value through original designs, technology, and innovation.
- 7. World Audio Visual & Entertainment Summit (WAVES) Website:** Creators are encouraged to participate by registering on the official website, [wavesindia.org](<http://wavesindia.org>), which serves as a hub for these challenges.

#### **Objectives of the 'Create in India' Initiative:**

- 1. Foster Intellectual Property Rights (IPR):** The initiative seeks to create awareness about the importance of Intellectual Property Rights (IPR) and to protect and promote innovation. It aims to empower Indian innovators to secure patents, trademarks, and copyrights, enhancing their ability to compete internationally.
- 2. Encourage Local Design and Creativity:** 'Create in India' emphasizes developing original designs and creative solutions tailored to both the domestic and international markets. This includes sectors like fashion, electronics, software development, and the arts.
- 3. Boost Employment and Entrepreneurship:** 'Create in India' is expected to create jobs and promote entrepreneurship, especially in high-value sectors like technology, biotechnology, pharmaceuticals, and renewable energy by nurturing an ecosystem that supports innovation.

**4. Global Competitiveness:** The initiative is designed to make Indian products, innovations, and services globally recognized by enhancing quality standards and fostering original ideas. This aligns with Prime Minister Narendra Modi's push for products that meet global quality standards while supporting local artisans and industries.

### Paryatan Mitra & Paryatan Didi Initiative

#### Why in News?

Ministry of Tourism launched a new initiative 'Paryatan Mitra' and 'Paryatan Didi' on the occasion of World Tourism Day (September 27th, 2024).

#### About the 'Paryatan Mitra' and 'Paryatan Didi' Initiative

Aspects	Description
About	'Paryatan Mitra' and 'Paryatan Didi' program is to connect tourists with locals who can act as Ambassadors and Storytellers for their regions.
Launched by	Ministry of Tourism
Aim	To enhance tourism through social inclusion, employment generation, and economic progress.
Vision	To create a welcoming and memorable experience for tourists by promoting Incredible India through the efforts of Incredible Indians, further enhancing India's reputation as a top tourist destination.
Key Objectives	Improve tourist experience through interaction with locals trained in hospitality, cleanliness, safety, and sustainability.
Pilot Program Locations	The initiative was piloted in 6 tourist destinations across India Orchha (Madhya Pradesh), Gandikota (Andhra Pradesh), Bodh Gaya (Bihar), Aizawl (Mizoram), Jodhpur (Rajasthan) and Sri Vijaya Puram (Andaman & Nicobar Islands)
Target Groups for Training	Cab and auto drivers, Railway station and airport staff, Hotel, restaurant, and homestay staff, Police personnel, Tour guides, street vendors, and shopkeepers and Students and other community members
Features	1) Training on developing new tourism products such as Heritage walks, food and craft tours, nature treks and homestay experiences. 2) This training is driven by the 'Athithi Devo Bhava' philosophy, emphasizing the importance of treating tourists as honored guests. 4) It involves knowledge sharing on local history, stories, and lesser-known tourist attractions to create engaging tourist interactions. 5) Special emphasis on empowering women and youth to develop tourism-based livelihoods. 6) Training on digital literacy and the use of digital tools to ensure global visibility and discoverability of the tourism experiences created by locals.



## World Tourism Day 2024

### Why in News?

Recently, World Tourism Day was celebrated on September 27.

### About World Tourism Day



Figure 6. Source: PIB

**1. About:** World Tourism Day is celebrated annually on September 27.

**2. Theme:** The theme for World Tourism Day 2024, "Tourism and Peace". The 2024 theme addresses current trends and challenges in the tourism sector.

**3. Aim:** The aim is to raise awareness of tourism's role in promoting international cooperation, sustainable development, and cultural exchange.

**4. History:** World Tourism Day is celebrated annually to commemorate the adoption of the UNWTO's (United Nations World Tourism Organisation) statutes in 1970.

**5. Significance:** It highlights the connection between tourism, peacebuilding, cultural exchange, and sustainable tourism practices, contributing to conflict resolution and global harmony.

### Initiatives to Boost Indian Tourism

**1. Dekho Apna Desh (2020):** It encourages domestic travel by promoting India's lesser-known destinations.

**2. People's Choice 2024 Campaign:** It was launched to seek public feedback on the best tourist destinations.

**3. Vibrant Villages Programme (2023):** It aims to develop border villages in northern India, with tourism and cultural promotion as a core focus.

**4. Capacity Building for Service Providers (CBSP) Scheme (2018):** It focuses on skilling, reskilling, and upskilling in hospitality and tourism sectors.

**5. 24x7 Multi-Lingual Tourist Info-Helpline:** It is available in 12 languages, offering support and guidance to tourists.

**5. E-Tourist Visa (2014):** It expanded from 43 to 76 countries, with future plans to cover 150 nations.

**6. RCS-UDAN Scheme (2016):** This has improved regional connectivity with 519 operational routes, including 53 tourism routes.

**7. Swadesh Darshan Scheme (2014-15):** It focused on sustainable tourism development; revamped as Swadesh Darshan 2.0 in 2024 with 57 identified destinations.

**8. PRASHAD Scheme (2014-15):** It prioritizes sustainable development of pilgrimage destinations.

**9. HRIDAY Scheme (2015):** It seeks to preserve and rejuvenate cultural heritage in 12 selected cities.

**10. Travel for LiFE Initiative (2023):** It encourages sustainable tourism through responsible use of tourism resources.

## UPSC Syllabus: Index and Reports

### Asia Power Index

#### Why in News?

Recently, **Asia Power Index was released by the Lowy Institute**. India has secured the position as the third most powerful nation in Asia, overtaking Japan in the 2024 Asia Power Index.

This reflects India's growing geopolitical influence, driven by its expanding economy, youthful population, and increasing diplomatic engagement.

#### About Asia Power Index

1. The Asia Power Index was established by the Lowy Institute in 2018.
2. It measures power dynamics across the Asia-Pacific, evaluating 27 countries.
3. The 2024 edition includes Timor-Leste and provides an in-depth analysis of power distribution across the region. It examines both material resources and the influence countries exert on the international stage.
4. **Criteria of Power Measurement:** The Asia Power Index uses eight key measures across two broad categories:

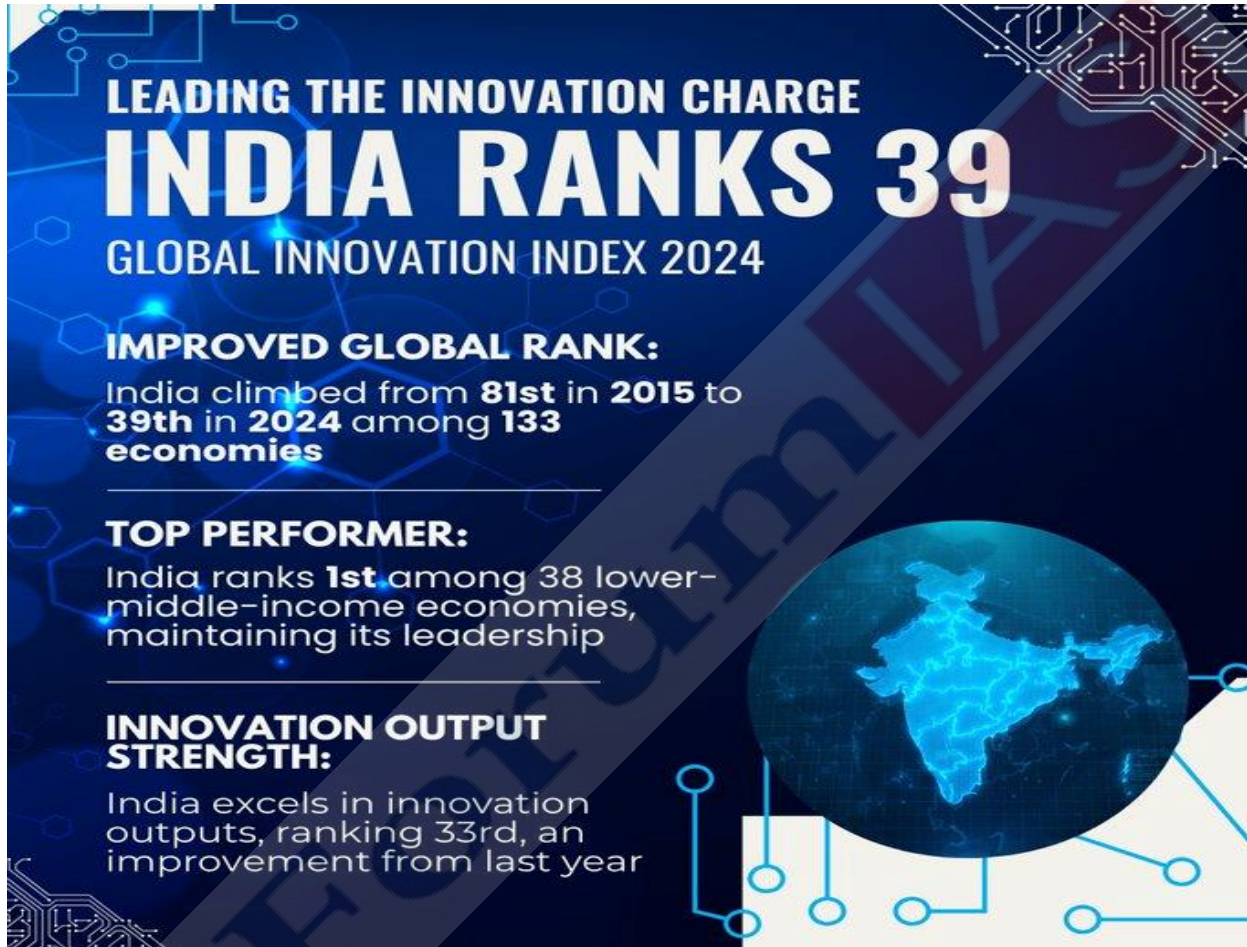
Criteria	Sub-Criteria
Resource-Based Determinants	<b>Economic Capability:</b> GDP at PPP, technological advancement, and global economic ties. <b>Military Capability:</b> Defense spending, military strength, and power projection abilities. <b>Resilience:</b> Institutional strength and capacity to withstand internal and external threats. <b>Future Resources:</b> Projected economic, military, and demographic resources for 2035.
Influence-Based Determinants	<b>Economic Relationships:</b> Leverage through trade, investment, and diplomacy. <b>Defense Networks:</b> Strength of military alliances and partnerships. <b>Diplomatic Influence:</b> Reach in multilateral forums and foreign policy ambition. <b>Cultural Influence:</b> Ability to shape global opinion through media and culture.

## Global Innovation Index (GII) 2024

### Why in News?

Recently, the Global Innovation Index (GII) was released by World Intellectual Property Organization.

### About Global Innovation Index (GII)



Source: PIB

Aspects	Description
About	1) The GI is a reliable tool for governments worldwide to evaluate the social and economic changes driven by innovation within their countries. 2) It assesses the performance of the innovation ecosystems in 133 economies and monitors the latest global innovation trends.
Released by	Geneva-based World Intellectual Property Organization

Indicators	<p>It uses approximately 80 indicators, grouped into innovation inputs and outputs, to assess various facets of innovation across different countries.</p> <p><b>1) Innovation Input Sub-Index:</b> Five input pillars capture elements of the economy that enable and facilitate innovative activities.</p> <p><b>2) Innovation Output Sub-Index:</b> Innovation outputs are the result of innovative activities within the economy. Although the Output Sub-Index includes only two pillars, it carries the same weight as the Input Sub-Index in calculating the overall GII scores.</p> <p><b>The overall GII score</b> is the average of the Input and Output Sub-Indices, on which the GII economy rankings are then produced.</p>
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### India's Rise in the Global Innovation Index 2024

**1. India's Global Ranking:** India climbed to 39th position among 133 global economies in the 2024 Global Innovation Index. The ranking highlights India's growing innovation capabilities.

**2. Regional and Economic Leadership:** India is the top performer in Central and Southern Asia. It also ranks first among lower-middle-income economies worldwide.

**3. Science and Technology Cluster Ranking:** India secured 4th place in the World Intellectual Property Organization (WIPO) Science and Technology Cluster Ranking. Major Indian cities like Mumbai, Delhi, Bengaluru, and Chennai are listed among the world's top 100 Science and Technology clusters.

**4. Global Standing in Intangible Asset Intensity:** India ranks 7th globally in intangible asset intensity, a key indicator of the country's growing innovation strength.

**5. Consistent Growth in Innovation:** India's position in the Global Innovation Index has steadily improved, rising from 81st in 2015 to 39th in 2024.

**6. Innovation Outputs and Inputs in 2024:** India ranks 33rd in innovation outputs, reflecting an improvement from last year. It ranks 44th in innovation inputs. India performs better in innovation outputs than in inputs, showcasing the strength of its innovative results.

## UPSC Syllabus: World Geography

### Taiwan Strait

#### Why in News?

Recently, a Japanese warship Sazanami destroyer sailed through the Taiwan Strait for the first time asserting its right to freedom of navigation.

## About Taiwan Strait



Figure 7. Source: WorldAtlas

**1. Location:** The Taiwan Strait is a narrow body of water located in East Asia, separating the island of Taiwan from mainland China.

**2. It connects two major seas:** The **East China Sea to the north** and the **South China Sea to the south**, making it a strategically vital waterway.

**3. Size:** The Taiwan Strait is about **180 kilometres** (110 miles) wide at its narrowest point between Taiwan and the southeastern coast of mainland China.

The strait stretches approximately **355 kilometres** (220 miles) from north to south.

### 4. Boundaries and Neighbouring Regions:

**a) To the East:** Taiwan Island, which includes major cities like Taipei and Kaohsiung along its coast.

**b) To the West:** The southeastern coast of mainland China, particularly the Fujian Province. Major Chinese cities near the strait include Fuzhou and Xiamen.

**c) To the North:** The East China Sea is a marginal sea

of the Pacific Ocean, lies to the north of the Taiwan Strait, forming part of the boundary with Japan.

**d) To the South:** The South China Sea is a heavily trafficked region for global shipping routes, connects with the Taiwan Strait to the south.

**5. Oceanographic Characteristic:** It is influenced by the **Kuroshio Current**, which flows northward along the east coast of Taiwan, contributing to the area's maritime climate and ocean dynamics.

**6. Climate:** The Taiwan Strait experiences a **subtropical climate with seasonal monsoons** affecting the region. Typhoons are common during the summer months, posing risks to maritime navigation.

**7. Geopolitical Importance:** The Taiwan Strait is **crucial for global shipping**, and conflict in this area could severely impact international trade, especially in industries like semiconductors where Taiwan is a key player.

**8. Strategic Importance:** Over **40% of global maritime trade passes through the region**, making it a vital choke point. Also, Taiwan's role in the global semiconductor industry further underscores the region's stability as essential to the global economy.