

The Hindu Important News Articles & Editorial For UPSC CSE

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The Supreme Court has recently dismissed a plea demanding delimitation in Andhra Pradesh and Telangana on the grounds of parity with the delimitation exercise conducted in Jammu & Kashmir in 2022.

States can't seek delimitation claiming parity with J&K: SC

SC explains that unlike the Union Territory, all States are bound by a constitutional embargo on delimitation till a post-2026 Census; J&K delimitation was done on the basis of the 2011 Census

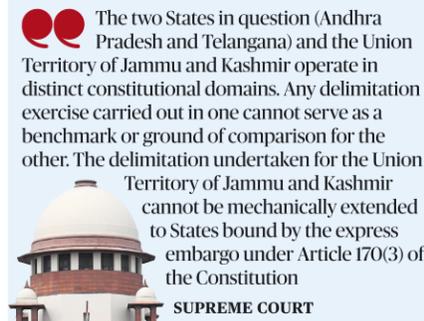
Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Friday held that the Centre did not discriminate against the electorates of Andhra Pradesh and Telangana or dampen their "legitimate expectations" by conducting the delimitation of constituencies in the Union Territory of Jammu and Kashmir in 2022.

A Bench of Justices Surya Kant and N. Kotiswar Singh said that States could not claim "parity" by arguing that delimitation was done in Jammu and Kashmir, but not for them. "That would be like treating unequals equally," the court observed.

Constitutional embargo

The judgment was based on a petition filed by Professor K. Purushottam Reddy, seeking a direction to the Centre to conduct a delimitation exercise in Andhra Pradesh and Telangana to readjust the seats in the States' Assemblies. The petitioner had pointed



to the exercise done in Jammu and Kashmir as a precedent. Justice Kant, who authored the verdict, explained that there was a specific constitutional embargo in Article 170 which mandated that the delimitation exercise in States is barred until after the completion of the first Census post 2026.

Jammu and Kashmir, on the other hand, being a Union Territory, is excluded from the freeze on delimitation under Article 170 of the Constitution. The delimitation exercise in the

Union Territory had been undertaken on the basis of the 2011 Census.

Distinct domains

"The two States in question (Andhra Pradesh and Telangana) and the Union Territory of Jammu and Kashmir operate in distinct constitutional domains. Any delimitation exercise carried out in one cannot serve as a benchmark or ground of comparison for the other. The delimitation undertaken for the Union Territory of Jammu and Kashmir cannot be me-

chanically extended to States bound by the express embargo under Article 170(3) of the Constitution," the Supreme Court held.

Besides, the court held that allowing delimitation for Andhra Pradesh and Telangana through a judicial dictum would foster discontent among other States and breed inequality.

"Granting such a relief would prompt unabated challenges from other similarly situated regions. In particular, the four North-Eastern States – Arunachal Pradesh, Assam, Manipur, and Nagaland – which were expressly excluded from the scope of delimitation by way of a Central notification in 2021," Justice Kant emphasised.

The court said that any leeway allowed to Andhra Pradesh and Telangana before the 2026 Census would "destabilise the uniform electoral framework and blur the clear demarcation between constitutional prescription and political discretion".

Background:

- Delimitation refers to redrawing boundaries of electoral constituencies based on latest population data.
- Article 170(3) of the Constitution freezes the readjustment of seats in State Assemblies until after the first Census post-2026.
- In 2002, through the 91st Constitutional Amendment, delimitation was frozen until 2026 to encourage population control measures.

Issue at Hand:

A petition was filed seeking delimitation in Andhra Pradesh and Telangana, citing the precedent of delimitation in the Union Territory of Jammu & Kashmir (J&K).

Supreme Court's Key Observations:

1. No Parity Between J&K and States:

- The Court held that Jammu and Kashmir, being a Union Territory, operates under different constitutional provisions.
- Article 170 does not apply to Union Territories like J&K.

2. Constitutional Embargo:

- The Court emphasized the explicit embargo in Article 170(3) that prevents delimitation in States until after the post-2026 Census.

3. Unequal Cannot Be Treated as Equal:

- Drawing equivalence between States and Union Territories is constitutionally incorrect.
- The Court remarked: "That would be like treating unequals equally."

4. Wider Implications:

- Allowing delimitation in Andhra Pradesh and Telangana would lead to widespread demands from other States, especially the North-Eastern States (e.g., Assam, Manipur), where delimitation is currently on hold.

5. Maintaining Uniformity:

- Any deviation could destabilize the electoral framework and blur the separation between constitutional norms and political discretion.

Significance of the Verdict:

- Reinforces Constitutional Discipline: Upholds the sanctity of constitutional provisions over political or regional demands.
- Clarity on Federal Structure: Reiterates that Union Territories and States are governed by different legal frameworks.
- Prevents Political Arbitrary Actions: Avoids a scenario where courts enable selective delimitation, undermining uniformity in democratic processes.

Implications for Governance and Politics:

- The judgment prevents misuse of judicial mechanisms for regional political gains.
- Promotes a balanced federalism, where constitutional provisions are not selectively applied.

- Ensures electoral equity by keeping the delimitation exercise uniform and synchronized with Census data.

UPSC Mains Practice Question

Ques: Delimitation is both a technical and political exercise. Discuss its constitutional limitations and implications on India's federal structure. **(150 Words)**



Page 11: GS 2 & 3 : IR and Economy

India and the United Kingdom have recently signed the Comprehensive Economic and Trade Agreement (CETA), aimed at enhancing bilateral trade and investment. A key feature of this agreement is the duty-free access provided by the U.K. for goods genuinely produced in India, which is expected to boost Foreign Direct Investment (FDI) into India.

Key Features of the Agreement:

1. Duty-Free Access:

- The U.K. has opened 99% of its tariff lines for Indian goods under zero-duty access.
- However, not all of these are currently being exported by India, leaving untapped potential for export expansion.

2. Rules of Origin (RoO):

- A dedicated chapter on 'Rules of Origin' ensures that only genuinely Indian or British goods qualify for reduced tariffs.
- This means goods must be either wholly obtained or substantially transformed in India/U.K. to avail the benefit.
- Repackaged imports (e.g., from China) will not qualify, thereby discouraging shell-trade practices.

3. Encouragement for Domestic Manufacturing:

- Firms aiming to export to the U.K. must set up manufacturing bases in India, rather than rely on third-country imports.
- This is expected to attract foreign companies to establish production hubs in India for U.K.-bound exports.

Implications for India:

Positive Impacts:

Duty-free access to U.K. via trade pact to drive FDI into India

CETA includes separate chapter on 'Rules of Origin', which stipulate what kind of goods are eligible for the reduced tariffs the agreement provides

T.C.A. Sharad Raghavan
NEW DELHI

The India-U.K. Comprehensive Economic and Trade Agreement (CETA) has the potential to boost foreign direct investment (FDI) into India, officials, industry participants and investment analysts wagered.

A major driver of this is the local sourcing norm in the agreement that mandates only goods made in India would be eligible for the tariff reductions.

The CETA includes a separate chapter on 'Rules of Origin', which stipulates what kind of goods are eligible for the reduced tariffs the agreement provides.

"To qualify for reduced tariffs, the rules of origin specify a product must either be wholly obtained or significantly transformed through processing in either the U.K. or India," as per documents accompanying CETA.

This was to ensure that only genuinely British or Indian goods could access the preferential tariffs under the agreement.

"This is an important aspect of the deal, since it means goods imported from abroad, repackaged, and then exported to the U.K. will not be eligible for



Unlocking potential: Union Minister Piyush Goyal and U.K. Business and Trade Secretary Jonathan Reynolds signing CETA. ANI

the zero duties," said a senior government official who did not wish to be named.

"This means companies looking to export to the U.K. will have to invest in proper manufacturing here, instead of importing from countries like China."

He added, while the U.K. had opened up 99% of its tariff lines, India did not export all of these tariff lines to the U.K.

Zero duty export

"However, what the deal does is provide potential," the official explained. "If a foreign company sees an opportunity to export a particular good to the U.K., it will view India favourably since they can export from here at zero duty."

Sarvadnya Kulkarni, CEO, General Instruments Consortium, an engineering components maker, said this was especially true for the precision engineering sector.

"The U.K.-India FTA is expected to significantly enhance foreign direct investment in India's precision engineering and industrial instrumentation sector," Mr. Kulkarni told *The Hindu*.

"With reduced tariffs and greater regulatory alignment, U.K. engineering, procurement, and construction firms and original equipment manufacturers and process industry investors are likely to find India more attractive for sourcing, joint ventures and technology transfers."

1. Boost to FDI:

- CETA provides predictability, market access, and tariff advantages, incentivizing foreign firms to invest in Indian manufacturing.
- Sectors like precision engineering, industrial instrumentation, and original equipment manufacturing (OEM) stand to gain.

2. Job Creation & Industrial Growth:

- Increased investment will likely lead to job creation, technology transfer, and capacity building in key industrial sectors.

3. Make in India & Aatmanirbhar Bharat:

- The local sourcing mandate aligns with the government's flagship schemes, encouraging self-reliance through value-added manufacturing.

4. Export Competitiveness:

- Zero-duty exports to the U.K. improve India's competitiveness vis-à-vis other low-cost manufacturing countries.

Challenges & Cautions:

1. Unequal Utilization:

- India currently does not export across all U.K. tariff lines opened up. Awareness and capability building among exporters is necessary.

2. Implementation Bottlenecks:

- Rules of origin, while protective, may be complex and burdensome for small exporters.
- Customs compliance and certification systems must be strengthened to prevent misuse and facilitate smoother operations.

3. FDI Quality Concerns:

- Mere volume increase in FDI is not sufficient. It must be high-quality, technology-intensive, and employment-generating.

4. Regulatory Harmonization:

- Regulatory alignment between India and the U.K. in technical standards and certifications will be critical for full realization of benefits.

Way Forward:

- **Strategic Sectoral Promotion:** Identify key sectors where Indian manufacturing has potential and create targeted incentives.
- **Infrastructure & Logistics Upgradation:** Improve ease of doing business, especially SEZs, port logistics, and export processing zones.
- **Capacity Building for MSMEs:** Help MSMEs meet rules of origin and quality standards to participate in global value chains.

Daily News Analysis

- **Monitoring & Review:** Establish a joint review mechanism to address trade imbalances, tariff disputes, and technical barriers.

Conclusion:

The India-U.K. CETA, through its emphasis on local value addition and preferential market access, represents a significant step towards transforming India into a global manufacturing hub. If leveraged effectively, it can stimulate quality FDI, enhance export competitiveness, and deepen India's integration with the global economy. However, the success of the agreement will depend on institutional readiness, policy support, and proactive industry engagement.

UPSC Mains Practice Question

Ques: The India-U.K. Comprehensive Economic and Trade Agreement (CETA) can become a catalyst for enhancing India's manufacturing capacity and attracting quality FDI. Critically examine the opportunities and challenges posed by the agreement. **(150 Words)**



At the 114th Annual General Meeting of ITC Ltd., Chairman Sanjiv Puri emphasized the need for Indian brands to first build a strong foundation in Bharat (rural and semi-urban India) before aspiring for global recognition. His speech reflects both the transformation of India's consumer market and the strategic imperatives for India Inc. in a changing economic landscape.

Key Highlights:

Indian Consumer Market Transformation:

1. Rising Income Levels:

- Per capita income projected to cross \$4,000 by 2030, indicating a shift towards middle-income economy status.
- Will lead to a surge in domestic consumption, especially of premium and value-added products.

2. Demographic Dividend:

- Gen Z to dominate workforce by 2035, influencing 50% of all consumer spending.
- Gen Alpha (children born after 2010) emerging as a unique consumer group – digitally native, socially aware, and AI-integrated.

3. Evolving Consumer Preferences:

- Demand for premiumisation, personalisation, and purpose-driven brands.
- Health & wellness, organic products, functional foods, and natural products expected to become megatrends.

Strategic Business Insights:

1. Building at Home Before Going Global:

- Brands must establish credibility, trust, and scale within India, especially in Bharat (rural areas), before expanding abroad.
- This strengthens brand resilience and consumer connect, vital for global competitiveness.

2. Omnichannel and Tech Integration:

Indian brands must adorn the global stage, says ITC's Puri

The Hindu Bureau
MUMBAI

Indian brands must adorn the global stage and towards that they must establish an enduring legacy in Bharat first, before making an impact overseas, said ITC Ltd. chairman Sanjiv Puri at the company's 114th Annual General Meeting held in Kolkata.

"ITC's FMCG portfolio today accounts for an annual consumer spend of over ₹34,000 crore, reaching over 260 million households in India and gaining encouraging consumer franchise in over 70 international markets," he said.

Consumption surge

He said India's consumer market was at the cusp of a profound transformation with per capita incomes expected to exceed \$4,000 by 2030.

"Gen Z, poised to become a predominant part of the workforce, is expected to account for every second rupee spent by 2035. The preferences of Gen Alpha, who are growing up in a hyper-digital, socially conscious and AI-integrated world, are also vying for attention as a distinctive cohort," he said.

"Tomorrow's consumers will increasingly seek premium products, varied experiences, brands with purpose, greater personalisation and seamless omnichannel engagements. Segments like health & wellness, nutrition, functional foods, organic and naturals are poised to become megatrends of the future."

Mr. Puri also said the new generation channels were also transforming the market and accentuating these trends. "ITC's diverse enterprise strengths



India's consumer market was at the cusp of a profound transformation, says Puri.

provide strategic competitive levers to capitalise on these evolving trends and deliver innovative value propositions to consumers," he said.

Stating that the growing consumer patronage and trust over the years for the company's products has led to expansion FMCG portfolio to serve domestic and global consumers with world-class home-grown brands he said over 100 new, differentiated and superior products were launched last year across categories.

New brands

"Even as we strengthen our mega brands, we are also introducing new brands and pursuing value-accretive acquisitions to address emerging opportunities and whitespaces," he said.

As consumers increasingly seek healthier, organic and natural food products, ITC is meticulously building its 'Good-for-You' portfolio with the mission to 'Help India Eat Better'.

ITC is also sharpening its focus on premiumisation as also value-added adjacencies, in line with evolving trends, the chairman of the firm added.

- Rise of digital channels and AI-driven engagement reshaping how consumers interact with brands.
 - Businesses must invest in tech-led value creation and seamless omnichannel presence.
- 3. Domestic Manufacturing and Innovation:**
- ITC has launched over 100 new, differentiated products in a year, signaling robust R&D and innovation capacity.
 - Focus on home-grown brands serving both domestic and international markets.
- 4. 'Good-for-You' Portfolio and Sustainable Consumption:**
- ITC's initiative to promote healthy, organic, and natural products aligns with sustainable development goals (SDGs) and public health.

Implications for India's Economy:

Atmanirbhar Bharat & Brand India:

- Promoting Indian-origin brands globally strengthens India's soft power and contributes to self-reliance in global trade.

Export-Led Growth through FMCG:

- FMCG can be a major non-tech, scalable export sector, provided brands adapt to global quality and safety standards.

Boost to Rural Economy:

- Targeting Bharat first ensures inclusive market growth, enhancing rural incomes and demand generation.

Entrepreneurship and MSMEs:

- Focus on innovation and new brands can encourage MSMEs and startups to enter niche markets like organic, functional, or personalised products.

Way Forward:

1. Invest in R&D and Branding:

- Indian companies must prioritise design, packaging, and storytelling to appeal to global sensibilities.

2. Leverage FTAs and Global Market Access:

- Utilize trade agreements (like India-U.K. FTA) to expand brand presence in strategic markets.

3. Skill & Capacity Building:

- Train workforce in consumer analytics, supply chain tech, and digital marketing to support brand expansion.

4. Sustainable Product Development:

- Align branding and product design with climate, health, and ethical consciousness of younger consumers.

Conclusion:

Sanjiv Puri's address underscores the transformative potential of India's consumer market and the strategic vision required to build globally competitive Indian brands. By focusing on Bharat first, adapting to demographic shifts, and aligning with emerging megatrends, Indian enterprises can not only dominate the domestic market but also lead on the global consumer stage. This vision resonates strongly with national goals of self-reliance, sustainable growth, and global leadership.

UPSCMainsPractice Question

Ques: India's consumer market is undergoing a structural transformation driven by rising incomes, generational shifts, and digital integration. Examine the key drivers of this transformation and assess their implications for India's manufacturing and services sectors.



French President Emmanuel Macron has announced that France will formally recognise the State of Palestine at the United Nations General Assembly in September 2025. This marks a significant shift in European diplomatic positioning, as France is one of the most influential EU powers.

France will recognise Palestine as a state in September, says Macron

French President says he intends to make a formal announcement at the UN General Assembly; Palestinian Authority welcomes the decision, saying it reflects France's commitment to international law; Israel's Netanyahu slams the move

Agence France-Presse
PARIS

French President Emmanuel Macron said on Thursday his country would formally recognise a Palestinian state during a UN meeting in September, the most powerful European nation to announce such a move.

At least 142 countries now recognise or plan to recognise Palestinian statehood, according to an AFP tally – though Israel and the U.S. strongly oppose the move.

U.S. Secretary of State Marco Rubio called it a “reckless decision (that) only serves Hamas propaganda”.



A Palestinian mother cradles her malnourished 18-month-old son at the Al-Shati refugee camp, west of Gaza City. AFP

Mr. Macron's announcement drew immediate anger from Israel, with Prime Minister Benjamin Netanyahu saying it “rewards terror” and poses an existential threat to Israel.

Senior Palestinian Authority official Hussein al-Sheikh welcomed the move, saying it “reflects France's commitment to international law and its support for the Palestinian

people's rights to self-determination and the establishment of our independent state”.

Mr. Macron said the “urgent priority today is to end the war in Gaza and rescue the civilian population”.

“We must finally build the State of Palestine, ensure its viability and enable it, by accepting its demilitarisation and fully recognising Israel, to contribute to the security of all in the Middle East,” he wrote on social media.

Mr. Macron said he intended to make the announcement at the UN General Assembly in September.

While France would be

the most significant European power to recognise a Palestinian state, others have hinted they could do the same.

Norway, Spain, Ireland and Slovenia all announced recognition following the outbreak of the Gaza conflict, along with several other non-European countries.

Spanish Prime Minister Pedro Sanchez, whose country already recognises Palestinian statehood, welcomed Mr. Macron's announcement.

“Together, we must protect what Netanyahu is trying to destroy. The two-state solution is the only solution,” the Socialist leader said.

Key Developments:

1. France's Announcement:

- Macron emphasized the need to end the war in Gaza, rescue civilians, and build a viable, demilitarised Palestinian state.
- He also stressed the two-state solution, with mutual recognition of both Palestine and Israel.

2. Global Recognition Status:

- 142 countries now recognise or plan to recognise Palestine.

- Recent recognitions include Spain, Ireland, Norway, Slovenia, among others.

3. Mixed International Response:

- Palestinian Authority welcomed the decision, citing support for self-determination and international law.
- Israel condemned it, calling it a reward for terrorism and a security threat.
- U.S. Secretary of State Marco Rubio labelled it "reckless," accusing France of emboldening Hamas propaganda.

4. UNGA Platform:

- Macron's decision to make the announcement at the UN General Assembly underlines France's intent to internationalise the issue and rally broader support for the two-state solution.

Geopolitical and Diplomatic Implications:

For France:

- Asserts France's independent foreign policy within the Western alliance.
- Positions France as a leader of European diplomacy advocating peace in the Middle East.
- May enhance France's image in the Global South, especially among Arab and Muslim-majority nations.

For the Israel-Palestine Conflict:

- Reinforces global momentum for the two-state solution, but risks deepening the rift between Israel and European countries.
- Could pressurise Israel to re-engage in peace talks but may also harden its stance under domestic political pressure.
- May empower the Palestinian Authority, while raising concerns of political legitimacy of Hamas in Gaza.

For the U.S. and Western Unity:

- Reveals divisions within the Western bloc on how to handle the Palestine issue.
- The U.S.–France divergence highlights a changing global order, where European powers are asserting strategic autonomy.

Implications for India:

1. India's Balanced Position:

Daily News Analysis

- India supports a sovereign, independent, viable, and united State of Palestine, coexisting peacefully with Israel.
- India maintains strategic relations with both Israel and Palestine, following a de-hyphenated approach.

2. Diplomatic Watchfulness:

- India may observe France's recognition carefully, especially if more major powers follow suit.
- Such developments could influence India's diplomatic calculus in the Middle East, especially within the West Asia Quad (I2U2) and energy-security partnerships.

3. Voice of the Global South:

- India, as a leader of the Global South, may use its position to push for peace and justice in the region through multilateral platforms like BRICS, NAM, or G-20.

Conclusion:

France's recognition of Palestine marks a symbolic and strategic intervention in a long-stalemated conflict. While it boosts international legitimacy for Palestinian statehood, it may also deepen regional tensions and strain Western consensus. The move underscores the urgency of reviving the two-state solution, and the role that global powers can play in fostering equitable peace in West Asia. For India, it is a moment to reinforce its balanced diplomacy while advocating for peaceful coexistence and international rule of law.

UPSC Mains Practice Question

Ques: Discuss the significance of France's formal recognition of Palestine in the context of the two-state solution. What impact could this have on India's diplomatic position in West Asia? **(150 Words)**

In News : Scheme for Promotion of Culture of Science

Union Minister for Culture and Tourism informed the Rajya Sabha that 27 Science Centres have been established under SPoCS. The scheme is gaining momentum as part of India's drive to promote scientific temper and innovation at grassroots levels.



About the Scheme:

Feature	Description
Launched by	Ministry of Culture, Government of India
Nodal Agency	National Council of Science Museums (NCSM) – Autonomous body under Ministry of Culture
Objective	Promote scientific awareness and culture among the general public, especially students
Coverage	Establishment of: - Science Cities - Science Centres

Feature	Description
	- Innovation Hubs - Digital Planetariums
Focus Areas	Hands-on exhibits, informal science education, outreach, and innovation facilitation
Category-III Centres	Centres/planetariums established in areas with population < 5 lakh

Significance of the Scheme:

1. Promotes Scientific Temper (Art. 51A(h)):

- Aligns with the Fundamental Duty to develop scientific temper and humanism among citizens.

2. Inclusive Outreach:

- Brings STEM learning infrastructure to rural, Tier-2 and Tier-3 towns.
- Encourages aspirational youth in underserved areas.

3. Innovation Culture:

- Innovation Hubs and hands-on exhibits promote experiential learning and critical thinking.

4. Supplement to Formal Education:

- Complements school curricula by providing interactive informal science education.
- Useful especially in regions with poor access to high-quality science education.

5. Tourism & Local Economy:

- Science centres and planetariums also act as educational tourist spots, boosting local economy.

Challenges:

- Funding constraints in remote areas.
- Limited digital penetration in backward regions affects digital planetarium operations.
- Staffing and training of science communicators and guides remains uneven.
- Need for periodic upgradation of equipment and content to stay relevant.

Way Forward:

- Integration with NEP 2020 goals of experiential learning and inquiry-based education.
- Promote STEM careers through collaboration with higher education institutes and research labs.
- Expand mobile science exhibitions for deeper outreach in tribal and hilly regions.
- Public-Private Partnerships (PPP) for financing and co-creating innovation labs.
- Leverage AI/AR/VR to enhance interactivity and personalization in science communication.

UPSC Prelims Practice Question

Ques: Consider the following statements regarding the Scheme for Promotion of Culture of Science (SPoCS):

1. It is implemented by the Ministry of Science and Technology.
2. The scheme supports the establishment of Science Cities, Innovation Hubs, and Digital Planetariums.
3. Under the scheme, Science Centres (Category-III) are set up in areas with a population of less than 5 lakh.
4. National Council of Science Museums (NCSM) is the nodal agency for its implementation.

Which of the above statements are correct?

- A. 1, 2 and 4
- B. 2, 3 and 4
- C. 1 and 2 only
- D. 2 and 4 only

Ans : B)



Classes
Quality education

The scientist who made 'mangroves' a buzzword

Until the late 1980s, the value of mangroves was primarily understood by the communities that lived around them and relied on them for fishery resources and their livelihoods. But today, the word "mangroves" has become a buzzword, whether in the area of disaster risk reduction in coastal areas, climate adaptation through carbon sequestration, enhancement of coastal fishery resources, or the conservation of shoreline bird sanctuaries, to name a few.

The turning point

Although the United Nations Development Programme and UNESCO initiated a regional project on mangrove research in 1988, it was in 1989 that M.S. Swaminathan proposed a leading role for mangroves in managing the impact of climate change in coastal areas. At the Climate Change and Human Responses conference in Tokyo in 1989, he explained that rising sea levels due to climate change would cause a salinisation of land and water resources in coastal areas, leading to the loss of food production and employment. A rise in the frequency of cyclones due to rising sea surface temperatures causes the loss of life, livelihoods, and natural resources. As a response, M.S. Swaminathan suggested immediate action for the sustainable management of mangrove wetlands. This was based on the principles of ecology, economics, and equity as well as research on the utilisation of mangrove genetic resources to develop new saline-tolerant crops (by transferring genes for salinity tolerance from mangroves to rice and other crops). A series of important developments found M.S. Swaminathan playing a pivotal role in mangrove restoration, conservation and management.

Thanks to M.S. Swaminathan's initiatives, the International Society for Mangrove Ecosystems (ISME) was established in 1990 in Okinawa, Japan – M.S. Swaminathan served as its Founding President till 1993.

He co-created the Charter for Mangroves and included it in the World Charter for Nature, prepared by the United Nations Conference on Environment and Development in 1992. To this



Selvam Vaithilingam

is a former Executive Director of the M.S. Swaminathan Research Foundation, and has four decades of experience in mangrove research and management

Mangrove forests, once considered to be marshy land, now occupy a central position in the coastal ecosystem and climate mitigation moves

day, this charter serves as a basis for mangrove conservation efforts at the global level.

The ISME conducted an assessment of the economic and environmental values of mangrove forests, including those in India, as well as the current state of their conservation. The ISME also organised a series of workshops on mangrove conservation and sustainable utilisation, published a manual of mangrove ecosystem restoration, and produced a World Mangrove Atlas. These activities, slowly but surely, transformed the common perception of what mangroves are: from an idea of them being marshy land waiting for conversion to other uses to their being central to a multiple-use coastal ecosystem. The ISME is promoting applied research, providing training to various stakeholders, and acting as a centre of knowledge products on mangroves.

Global infrastructure for conservation

Another vital contribution of M.S. Swaminathan was the development of the Global Mangrove database and Information System (GLOMIS), a searchable database on mangrove experts, research, and species, including the Mangrove Ecosystem Information Services, which focused on documenting genetic resources. In 1992, a team of scientists surveyed and evaluated 23 mangrove sites in South, Southeast Asia, and Oceania over nine countries, with scientific inputs from M.S. Swaminathan, to establish a global network of Mangrove Genetic Resource Centres. These centres are now conserved, monitored and managed as 'Protected Areas' by the respective governments.

At the national level, M.S. Swaminathan was instrumental in revolutionising India's management of mangroves. India has a long history of mangrove management, dating back to 1783. However, this period was marked by extensive clearance and reclamation of the Sundarbans mangrove forests, primarily for agriculture and settlements. The practice of clear-felling as a system of mangrove management was widespread in India from the British colonial period until 1980, when the Indian Forest (Conservation) Act was enacted.

The working plans prepared by the British, and later by the State Forest Departments of independent India, showed that attempts to restore mangroves in clear-felled areas yielded minimal results. On the other hand, local communities were blamed for the poor results. Here, researchers from the M.S. Swaminathan Research Foundation, under the guidance of M.S. Swaminathan, played a key role.

Participatory research during 1993 and in the following years, first with the Tamil Nadu Forest Department and then with other States and local communities, revealed that changes in the biophysical conditions of the mangroves, due to the clear-felling system of management, were the primary reason for their degradation rather than resource utilisation by local communities. Based on this scientific evidence, a hydro-ecological method of mangrove restoration – commonly referred to as the fishbone canal method – was developed and pilot-tested in the mangroves of Tamil Nadu, Andhra Pradesh, Odisha, and West Bengal.

This method later evolved into a Joint Mangrove Management programme, which the then Ministry of Environment and Forests, evaluated in 2000 through a committee and recommended for replication in all suitable areas. This resulted in more investment by the Central and State governments for mangrove restoration and conservation. The immense role played by mangroves during the 1999 Odisha super cyclone and the 2004 Indian Ocean tsunami, in reducing the loss of life and damage to property and natural resources, paved the way for valuing large-scale restoration of mangroves, in India and globally.

Rise in mangrove cover

World Mangrove Day (July 26) is also an occasion to look at whether there has been change. The India State of Forest Report (ISFR) 2023 says that the total mangrove cover in India is 4,991.68 km², which accounts for 0.15% of the country's total geographical area. If one compares the ISFR 2019 to the ISFR 2023, there has been a significant increase, of 16.68 km², in the country's mangrove coverage.

GS 03 Environment and Ecology

UPSC Mains Practice Question: Evaluate the role of mangroves in disaster management and climate change mitigation. How has India progressed in mangrove restoration? (150 words)

Context :

On the occasion of World Mangrove Day (July 26), it is timely to reflect on the pioneering role of M.S. Swaminathan in making mangroves central to global environmental and climate discourse. Through scientific research, institutional creation, and policy advocacy, he helped reframe mangroves from neglected marshlands to critical ecosystems for climate resilience, biodiversity, and livelihoods.

Key Contributions of M.S. Swaminathan:

1. Climate Change Visionary (1989 onwards):

- At the Tokyo Conference on Climate Change and Human Responses (1989), Swaminathan:
 - Warned about sea level rise, salinisation, and loss of coastal livelihoods.
 - Proposed mangrove-based climate adaptation, including:
 - Sustainable management of wetlands.
 - Development of saline-tolerant crops using mangrove genetics (e.g., rice).

2. Global Advocacy and Institutional Framework:

- Founded the International Society for Mangrove Ecosystems (ISME) in 1990 (Okinawa, Japan); served as founding president till 1993.
- Co-authored the Charter for Mangroves, part of the UN World Charter for Nature (1992) — still a guiding document for global conservation.

3. Scientific Documentation and Capacity Building:

- **Led initiatives such as:**
 - World Mangrove Atlas and Mangrove Restoration Manual.
 - GLOMIS (Global Mangrove Database and Information System) to map research, experts, species, and genetic data.
 - Survey of 23 key mangrove sites in Asia and Oceania to create a network of Mangrove Genetic Resource Centres (now protected by national governments).

Impact on Indian Environmental Policy:

1. Reforming Colonial Legacy:

- India had a legacy of clear-felling mangroves, dating back to 1783 and colonial forestry practices.
- M.S. Swaminathan Research Foundation (MSSRF) conducted participatory research revealing:
 - It was biophysical degradation, not community use, that led to mangrove loss.

- Resulted in a paradigm shift in policy — from blame to eco-restoration.

2. Fishbone Canal & Joint Mangrove Management:

- Developed the fishbone canal method of mangrove restoration (Tamil Nadu, Odisha, Andhra Pradesh, West Bengal).
- Led to Joint Mangrove Management programmes with communities and forest departments.
- Institutionalised with support from the Ministry of Environment and Forests (2000).

3. Mangroves as Natural Infrastructure:

- Recognised for their disaster mitigation role:
 - During 1999 Odisha cyclone and 2004 Indian Ocean tsunami, mangroves reduced loss of life and property.
 - Catalysed further investment in restoration and protection.

Current Status:

India's Mangrove Cover (ISFR 2023):

- Total mangrove area: 4,991.68 km² (0.15% of India's geographical area).
- Net increase since ISFR 2019: +16.68 km².
- Reflects the positive impact of restoration efforts led by scientific and community-based models.

Conclusion:

M.S. Swaminathan's work on mangroves exemplifies visionary science aligned with grassroots empowerment. By linking ecology, economics, and equity, he not only helped restore coastal ecosystems but also built global frameworks for their protection. His legacy is visible in India's growing mangrove cover, community-led restoration, and a global shift in environmental values — a model worth emulating in all ecological conservation efforts.