



# Daily Current Affairs



## To The Point by Dhananjay Gautam

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## 1 History and Evolution of Monsoon Forecasting in India

**Context:** The India Meteorological Department (IMD) recently forecasted 'above normal' rainfall (105% of the Long-Period Average) for the 2025 southwest monsoon (June–September).

This prediction holds vital significance, as the southwest monsoon accounts for nearly 70% of India's annual rainfall, playing a critical role in agriculture, the economy, and water resource management.



### Did You Know? Ancient Indian Weather Wisdom:

- Meteorology in India has deep roots in ancient knowledge systems.
- Classical Indian texts such as the Upanishads, Brihatsamhita, Arthashastra, and Meghdoot contain detailed observations on rainfall patterns, clouds, and seasons.
- These works demonstrated an advanced understanding of nature's cycles long before modern meteorology.

### Scientific Beginnings and Colonial Developments:

- The modern study of meteorology in India began in the 17th century when Edmund Halley proposed a scientific explanation for the monsoon winds.
- During British rule, early observatories were established in Madras (1796), Calcutta (1829), and Bombay (1841).
- Captain Henry Piddington, a British officer, coined the term "cyclone" while studying tropical storms in the Bay of Bengal.

### Timeline of Monsoon Forecasting in India:

#### 1877 – Forecasting Begins:

- IMD started monsoon forecasting following the Great Famine of 1876–78, which highlighted the urgent need for rainfall prediction.

#### 1886 – First Long-Range Forecast:

- Henry Francis Blanford, IMD's first Meteorological Reporter, linked Himalayan snow cover to monsoon strength and made the first seasonal forecast.

#### 1904–1920s – Sir Gilbert Walker's Contributions:

- Sir Gilbert Walker introduced statistical models using 28 global parameters, including the Southern Oscillation (SO)—a precursor to what we now know as ENSO (El Niño–Southern Oscillation).
- He divided India into three meteorological subregions for better accuracy.

### Post-Independence Developments:

#### Challenges with Early Models:

- Walker's model continued until 1987, but its effectiveness declined due to changing climate patterns.
- In 1988, a new regression model (called the Gowariker Model) was introduced using 16 predictors, but it struggled with regional accuracy.



## Modernization and Technological Shifts:

### Key Improvements Over the Years:

#### 2003 – Two New Models Introduced

- IMD added two statistical models using **8 and 10 parameters**, along with a **two-stage forecast strategy**.

#### 2007 – Statistical Ensemble Forecasting System (SEFS):

- Introduced **ensemble forecasting**, which uses **multiple model runs** to provide a range of outcomes.
- The number of parameters was reduced to **streamline predictions**.

#### 2012 – Monsoon Mission and MMCFS:

- The **Monsoon Mission Coupled Forecasting System (MMCFS)** was launched.
- It integrates **ocean, atmospheric, and land interactions**, greatly enhancing forecast accuracy and long-range prediction capability.

#### 2021 – Multi-Model Ensemble (MME):

- IMD adopted a **global ensemble model approach**, combining outputs from multiple climate models, including **MMCFS**, to refine and **increase the reliability** of forecasts.

### Impact and Accuracy Gains:

- From **1989 to 2006**, monsoon forecast errors were significantly higher.
- **Since 2007**, the **absolute forecast error has dropped by 21%**, a testament to **technological upgrades and scientific advancements**.

### Why It Matters:

- The **southwest monsoon** is the **lifeline of Indian agriculture**, especially for rain-fed farming systems.
- Accurate forecasting:
  - Helps **farmers plan sowing and harvesting cycles**
  - Aids in **drought and flood preparedness**
  - Informs **water reservoir management**
  - Supports **policymakers and disaster response agencies**

### Extra Insight: What is the Long-Period Average (LPA)?

The **LPA** refers to the **average rainfall received during the monsoon season over a 50-year period** (currently calculated from 1971–2020).

It acts as a **benchmark** to define monsoon categories:

- **Below Normal:** < 96% of LPA
- **Normal:** 96–104% of LPA
- **Above Normal:** 105–110% of LPA
- **Excess:** >110% of LPA

## 2 The Bandung Conference: A Turning Point in Global Politics

**Context:** In 1955, the Indonesian city of **Bandung** hosted a landmark event that reshaped the geopolitical landscape—the **Bandung Conference**. Held **70 years ago**, this historic gathering brought together **29 newly independent nations** from **Asia and Africa**, united by their shared history of colonialism and a vision for a sovereign future.



The conference marked the **first large-scale Afro-Asian summit**, setting the stage for what would later become a powerful voice in international affairs—the **Global South**. In a Cold War era dominated by two superpowers, the conference boldly asserted that emerging nations would not be mere pawns in a bipolar world order.

### The Purpose: Decolonization and Collective Voice

The **primary objective** of the Bandung Conference was to **strengthen economic and cultural cooperation** among developing nations while **rejecting all forms of colonialism, imperialism, and neocolonialism**. The participating countries recognized the need for a **unified front** to address global inequalities and forge an **independent path of development**.

### The Ten Principles of Bandung (Dasasila Bandung):

The spirit of Bandung was enshrined in **Ten Foundational Principles**, which laid the moral and diplomatic groundwork for future cooperation:

1. **Respect for human rights** and adherence to the **UN Charter**
2. **Sovereignty and territorial integrity** of all nations
3. **Equality** among all races and nations, large or small
4. **Non-intervention** in the internal affairs of states
5. **Right to self-defense**, in line with the UN Charter
6. **No military alliances** serving big power interests
7. **Avoidance of force or aggression** in international relations
8. **Peaceful dispute resolution** through dialogue and negotiation
9. **Mutual interests and cooperation** among nations
10. **Commitment to justice and international obligations**

These principles remain **timeless ideals** for international diplomacy and are echoed in today's multilateral forums.

### The Birth of the Non-Aligned Movement (NAM):

The Bandung spirit gave rise to the **Non-Aligned Movement (NAM)**, formally established in **1961 in Belgrade**, Yugoslavia. The movement was led by **five visionary leaders**:

- **Jawaharlal Nehru** (India)
- **Gamal Abdel Nasser** (Egypt)
- **Kwame Nkrumah** (Ghana)



- **Sukarno** (Indonesia)
- **Josip Broz Tito** (Yugoslavia)

NAM emerged as a platform for countries to **remain independent** of both Western and Soviet blocs during the Cold War, advocating for **sovereignty, peace, and development** without external interference.

NAM is the **second-largest international organization after the United Nations**, currently comprising **120 member states**, representing over **55% of the world's population**.

### Current Relevance: Bandung's Legacy in a Multipolar World

Today, as the world experiences **shifting power dynamics** and rising tensions among global powers, the Bandung message is more relevant than ever. Calls for a **just, inclusive, and multipolar world order** echo the original aspirations of the 1955 conference. Issues such as **economic inequality, digital colonialism, and climate justice** are modern challenges that resonate deeply with Bandung's core ideals.

### Conclusion: A Symbol of Unity and Resistance

The **Bandung Conference** remains a **powerful symbol of dignity, unity, and independence** for the Global South. It signaled the rise of a new global consciousness—one grounded in **mutual respect, peaceful coexistence, and collaborative progress**.

As we mark the **70th anniversary** of this transformative event, it is a moment to **reinvigorate the Bandung Spirit** and work collectively toward a **fairer, more equitable global future**.

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**3 Government Strengthens Cybercrime Fight with I4C-ED Collaboration**

**Context:** In a significant move to **tighten the grip on cyber-enabled financial crimes**, the Government of India has empowered the **Indian Cyber Crime Coordination Centre (I4C)** to **share and receive information** with the **Enforcement Directorate (ED)** under the **Prevention of Money Laundering Act (PMLA), 2002**. This strategic inclusion under **Section 66 of PMLA** will significantly **enhance investigative capabilities** and **track illicit money trails**, especially in **transnational cyber frauds**.

**What is I4C?**

The **Indian Cyber Crime Coordination Centre (I4C)** is an initiative under the **Ministry of Home Affairs**, designed to provide a **robust framework** for law enforcement agencies to **coordinate and tackle cybercrimes** effectively. It works as a **hub for data analytics, investigation support, and capacity building**, facilitating a pan-India response to digital threats.

**About the Enforcement Directorate (ED):**

The **Enforcement Directorate**, established in **1956**, is a **multi-disciplinary law enforcement agency** under the **Department of Revenue**, Ministry of Finance. It enforces key financial laws, including:

- **The Foreign Exchange Management Act (FEMA), 1999** – a **civil law** that governs foreign exchange dealings in India.
- **The Prevention of Money Laundering Act (PMLA), 2002** – a **criminal law** that empowers the ED to investigate and prosecute money laundering.
- **The Fugitive Economic Offenders Act (FEOA), 2018** – targets economic offenders trying to evade Indian laws by remaining overseas.

By joining forces with I4C, the ED can now **track digital footprints** of criminals and **intercept illicit fund flows** across borders more effectively.

**Understanding Cybercrime:**

**Cybercrime** refers to unlawful activities carried out through **computers, networks, or digital devices**. It targets both individuals and institutions, aiming to **steal, disrupt, or manipulate data** for profit or malicious intent.

**Common Types of Cybercrime:**

- **Hacking** – Unauthorized access to systems or data
- **Phishing** – Deceptive attempts to obtain sensitive information
- **Malware** – Malicious software like viruses and ransomware
- **Identity Theft** – Misuse of personal or financial data
- **Cyber Espionage** – Unauthorized surveillance or information gathering
- **Cyberbullying** – Online harassment and intimidation

**Impact of Cybercrime on Society:**

- **Threat to National Security** – Critical infrastructure such as defense, banking, and energy sectors are prime targets.



- **Massive Data Breaches** – Can lead to exposure of personal information and trade secrets.
- **Service Disruptions** – Attacks on power grids or telecom networks cause public chaos.
- **Reputational Damage** – Organizations may lose public trust and investor confidence.

### Government Measures to Combat Cyber Threats:

#### Key Initiatives Include:

- **Indian Computer Emergency Response Team (CERT-In):** National agency for responding to cybersecurity incidents and issuing threat advisories.
- **National Critical Information Infrastructure Protection Centre (NCIIPC):** Safeguards sectors critical to national survival like energy, finance, and healthcare.
- **Cyber Crime Prevention against Women and Children (CCPWC):** Financial assistance to states for setting up cyber forensic labs and specialized units.
- **National Cyber Crime Reporting Portal:** A platform for citizens to report cybercrime (<https://cybercrime.gov.in>) and dial **1930** for real-time assistance.
- **Cyber Swachhta Kendra:** Offers free tools to detect and remove malware and botnets from infected devices.

**New Trend Alert:** Cybercriminals are increasingly using **AI-driven deepfakes** and **cryptocurrency laundering** to evade detection.

### International Cybersecurity Frameworks:

#### India aligns with global best practices through international conventions:

- **Budapest Convention on Cybercrime:** The first international treaty addressing crimes like data interference and content misuse.
- **Malabo Convention (Africa):** Focuses on cybersecurity and data protection in African nations.
- **United Nations Internet Governance Forum (IGF):** A global platform for policy discussions on digital governance and cyber laws.

### Conclusion: A Smarter, Safer Digital India

Bringing **I4C** under the ambit of PMLA is a **landmark step** toward building a **safer digital ecosystem**. This integration enables **real-time intelligence sharing**, boosts the ability to **detect and prosecute complex cyber frauds**, and strengthens **financial and cyber governance**.

As India moves forward in its digital transformation, this collaboration between I4C and ED will be crucial in **safeguarding citizens, institutions, and the economy** from rising cyber threats.

## 4 New Vision for Indian Cities: River and Urban Planning in Harmony

**Context:** In a forward-thinking move, the **National Mission for Clean Ganga (NMCG)** has approved an **Annual Master Plan** under the **River Cities Alliance (RCA)** to mainstream **river-sensitive urban planning** across India. This bold initiative marks a critical step in ensuring that urban growth aligns with the **ecological and cultural vitality of rivers**.



The plan includes a robust framework for **capacity-building programs, technical guidance, knowledge-sharing platforms, and thematic research**, with a vision of making rivers a **central element of urban development**.

**Urban River Management Plans (URMPs): A Sustainable Blueprint**

Launched in **2020** by the **National Institute of Urban Affairs (NIUA)** and **NMCG**, the **Urban River Management Plans (URMPs)** provide a first-of-its-kind approach to manage rivers through an integrated **environmental, economic, and social lens**.

**Key Highlights:**

- Five cities—**Kanpur, Ayodhya, Chhatrapati Sambhaji Nagar, Moradabad, and Bareilly**—have already developed URMPs.
- An additional **25 cities** will develop their URMPs in the coming year, as part of a broader goal to prepare **60 such plans** across India.
- **Steering Committees** have been established in key states like **Uttarakhand, Uttar Pradesh, Bihar, and West Bengal** to support and guide this process.
- The initiative is **supported by the World Bank**, emphasizing its global alignment and importance.

**Fun Fact:** Rivers in cities like London (Thames), Seoul (Cheonggyecheon), and Paris (Seine) have undergone successful rejuvenation, serving as global models for integrating waterways into urban life.

**River Cities Alliance (RCA): A Platform for Urban-River Synergy**

The **River Cities Alliance**, launched in **2021** by **NMCG and NIUA**, functions as a **national-level collaborative platform** for Indian cities to share **best practices and technical support** for river management.

**Core Pillars:**

- **Networking** among cities to promote peer learning
- **Capacity Building** through training and knowledge dissemination
- **Technical Assistance** for river-centric urban planning

Since its inception with **30 cities**, the RCA has grown to over **145 members**, including cities from **both Ganga and non-Ganga river basins**. In a notable milestone, **Aarhus (Denmark)** joined the alliance, adding an international perspective.



**Insight:** River-sensitive urban planning promotes not just ecological balance, but also **flood resilience, air quality improvement, and urban beautification.**

### **Global River Cities Alliance (GRCA): Taking India's Model Worldwide**

India's success with RCA paved the way for the **Global River Cities Alliance (GRCA)**, launched at COP28 in 2024. This platform brings together **over 275 river cities** from **11 countries**, including **Japan, Australia, the Netherlands, Egypt, Ghana, and Bhutan**, creating a global dialogue for **river conservation and urban water resilience.**

Supported by institutions like the **World Bank, Asian Development Bank (ADB), and Asian Infrastructure Investment Bank (AIIB)**, the GRCA aims to **promote integrated water resource management and international collaboration.**

### **National Mission for Clean Ganga (NMCG): The Force Behind the Mission**

The **NMCG**, established as a **registered society** under the **Societies Registration Act, 1860**, is the nodal agency for implementing the **Namami Gange Programme**—the government's flagship mission for **Ganga rejuvenation.**

#### **Key Functions of NMCG:**

- **Pollution abatement and ecological rejuvenation** of River Ganga.
- Maintain **minimum ecological flows** while ensuring **sustainable development.**
- Managed through a two-tier structure: **Governing Council** and **Executive Committee**, both headed by the **Director General.**
- The Executive Committee can sanction projects up to **₹1000 crore.**

### **Conclusion: Towards Resilient, River-Friendly Cities**

The approval of the **Annual Master Plan** under RCA reflects India's commitment to **sustainable urbanization** by placing rivers at the heart of city planning. With an ambitious roadmap for **URMPs, international collaborations, and a robust policy framework**, India is setting a benchmark for **river-centric urban development**—a model that other nations are beginning to follow.

## 5 Tax Exemption Granted to NMCG: A Boost to Ganga Rejuvenation Efforts

**Context:** The Central Board of Direct Taxes (CBDT) has officially notified the National Mission for Clean Ganga (NMCG) as an authority under the Income Tax Act, 1961. This major decision grants **income tax exemption** to NMCG, strengthening its financial and operational capacity under the ambitious Namami Gange Programme.

**Namami Gange Programme: India's Flagship River Rejuvenation Mission**

Launched in 2014, the **Namami Gange Programme** is an **integrated conservation mission** to clean and rejuvenate the **Ganga River**. With a massive budget outlay of ₹20,000 crore, it is one of India's most comprehensive river revitalization efforts.

**Key Objectives:**

- **Pollution abatement**
- **Conservation and rejuvenation of the National River Ganga**

**Administrative Setup:**

- Implemented by NMCG and State counterparts called **State Program Management Groups (SPMGs)**
- Overseen by the **National Ganga Council (NGC)**, chaired by the **Prime Minister**
- Three-tier monitoring mechanism:
  - **National Level:** High-level task force chaired by **Cabinet Secretary**
  - **State Level:** Committee chaired by **Chief Secretary**
  - **District Level:** Chaired by **District Magistrate**

**Implementation Phases:**

1. **Entry-Level Activities** – Quick, visible impact
2. **Medium-Term Activities** – Within 5 years
3. **Long-Term Activities** – Within 10 years

**Recent Developments: Tax Relief for NMCG****Legal Foundation of Exemption:**

- **Section 10, Clause 46A of the Income Tax Act, 1961**
- Applicable to authorities formed under a **Central/State Act** for public benefit
- **NMCG qualifies** under the **Environment (Protection) Act, 1986**
- Effective from **Assessment Year 2024–25**

**Significance of the Tax Exemption:**

- Enhances **financial autonomy**
- Improves **operational efficiency**
- Crucial for the **execution of Namami Gange projects**
- Reduces fiscal strain from past tax liabilities

**Background & Legal Transition of NMCG:**

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- **2011:** Established as a **society** under the **Societies Registration Act, 1860**
- **2016:** Upgraded to an **authority** under the **Environment (Protection) Act, 1986**
- Despite the upgrade, its **PAN status** remained as an **Association of Persons (AOP)**, causing tax-related confusion and scrutiny

#### Income Tax Disputes and Resolution:

- Faced tax demands totaling **243.74 crore**
- **CBDT intervention:** Permitted **delayed revised returns** for three assessment years
- **Retrospective exemption** allowed
- Action facilitated by the **Ministry of Jal Shakti** in coordination with the **Ministry of Finance**

#### Additional Insights & Facts:

- **NMCG is critical** not just for cleaning the Ganga but also for building **climate-resilient cities** and **reviving aquatic biodiversity**
- **Tax-exempt status** ensures smoother **foreign and multilateral funding**, especially from partners like the **World Bank, Japan International Cooperation Agency (JICA)**, and others
- The Ganga River Basin covers **26% of India's landmass** and supports **over 40% of the population**—making its rejuvenation **nationally vital**

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**6 Draft GEI Target Rules 2025: Paving the Way for a Low-Carbon Industrial Future**

**Context:** The Ministry of Environment, Forest and Climate Change (MoEFCC) has introduced the Draft Greenhouse Gases Emissions Intensity (GEI) Target Rules, 2025.

These rules set **sector-specific emission reduction targets** for “obligated entities” and establish a robust **compliance framework** under the **Carbon Credit Trading Scheme (CCTS), 2023**—a significant step toward achieving India’s Paris Agreement climate commitments.

**What are Greenhouse Gases (GHGs)?**

**GHGs** are atmospheric gases that **trap heat**, contributing to **global warming** through the **greenhouse effect**.

**Major GHGs:**

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Ozone (O<sub>3</sub>)
- Water vapour
- Synthetic gases like CFCs and HCFCs

**Understanding GEI: Greenhouse Gas Emissions Intensity**

**GHG Emissions Intensity (GEI)** measures **emissions per unit of output**, e.g., tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e) per tonne of cement or aluminium produced.

**As defined by the Draft Rules:**

“Greenhouse gases emission intensity in tCO<sub>2</sub>e / equivalent output or product.”

This provides a **standardized benchmark** for industries to track, reduce, and report emissions.

**Key Highlights of Draft GEI Target Rules, 2025:****Baseline and Targets:**

- **Baseline Year:** 2023–24
- **Target Years:** 2025–26 and 2026–27
- Tied to **CCTS 2023** and India’s long-term emission strategy

**Industries Covered:**

- Aluminium (13 plants)
- Cement (186 plants)
- Pulp & Paper (53 plants)
- Chlor-Alkali (30 plants)

**Total Units Covered:** 282



### Major Corporations Assigned Targets:

- Vedanta, Hindalco, Ultratech, JK Cement, Grasim, Shree Cement, Dalmia Cement, NALCO, and others.

### Compliance & Penalties:

- **Defined compliance mechanisms**
- **Penalties** for failure to meet reduction targets
- **Performance-linked incentives** via carbon credits

### From PAT to CCTS: A Greener Evolution

#### Foundation: PAT Scheme (2012)

- **Perform, Achieve, Trade (PAT)** encouraged energy efficiency.
- **Earned Energy Saving Certificates (ESCerts)** for overachievers.

### Evolution to Carbon Credit Trading Scheme (CCTS), 2023:

- Expands focus to **GHG reduction** across sectors.
- Establishes **GEI targets** and promotes **carbon market participation**.

### How CCTS Works: India's Carbon Market Explained

#### Framework:

- **Carbon Credit Certificates** generated when targets are exceeded.
- Traded on the **Indian Carbon Market**.
- Overseen by **Bureau of Energy Efficiency (BEE)** and **Ministry of Power**.

#### Industries Must:

- Submit **Action Plans** to achieve GEI targets.
- **Buy credits** or **face penalties** (enforced by **CPCB**) if underperforming.

#### Incentives & Market Dynamics:

- **Surplus achievers:** Sell credits for profit
- **Lagging sectors:** Buy credits and invest in **clean technologies**

#### Global Comparisons & Context:

- **European Union ETS (2005):** First large-scale carbon market
- **China's ETS (2021):** Now world's largest by emissions covered
- India's CCTS aligns with global best practices under **Article 17 of the Kyoto Protocol**

#### Alignment with India's Climate Goals:

#### Key Target under the Paris Agreement:

Reduce **emissions intensity of GDP** by **45% by 2030** compared to 2005 levels.

- GEI targets drive **climate-smart industrial growth**
- Encourages adoption of **advanced, low-carbon technologies**
- Ensures **India's development pathway** remains sustainable