

## Mains Master

### The problem with India's science management

#### I. Challenges in Indian Science Establishment:

- **Financial Constraints:** India allocates a mere 0.7% of GDP for research and development, lagging significantly behind the United States (3.5%) and China (2.4%).
- **Strategic Fund Allocation:** Prioritizing projects with high impact becomes imperative to navigate the financial constraints effectively.

#### II. Failings in Scientific Administration:

- **Inefficient Resource Management:** Scientific projects suffer from inefficient resource management, leading to a lack of sustained commitment to critical endeavors.
- **Space Program Competitiveness:** India's space program faces challenges, evidenced by the Indian Space Research Organisation ranking eighth globally in 2022.

#### III. Dominance of Public Sector and Bureaucratic Hurdles:

- **Public Sector Influence:** The scientific landscape is dominated by the public sector, exacerbating bureaucratic challenges such as sluggish funding approvals and uneven decision-making.

#### IV. Role of Senior Scientists in Administration:

- **Flawed Assumption:** The pivotal role of senior scientists in administration rests on the flawed assumption that adept scientists inherently transition into effective science administrators.

#### V. Challenges with Scientist-Administrators:

- **Deficient Administrative Skills:** Scientist-administrators often lack the essential administrative skills needed for effective resource allocation.
- **Training Gap:** The absence of comprehensive training perpetuates issues, leading to the derailment of entire projects due to inconsequential factors.

#### VI. Conflicts of Interest and Lack of Oversight:

- **Institutional Conflicts:** Prevalent conflicts of interest within institutions undermine the integrity of the scientific process.
- **Normalization of Scandalous Practices:** Quality control concerns, including high plagiarism rates and under-the-table dealings, become normalized.

#### VII. Historical Roots of the Systemic Issues:

- **Historical Practices:** Systemic challenges find roots in historical practices, notably the concentration of high-end equipment in select institutions post-Independence.
- **Gatekeeper Influence:** Gatekeepers wielding disproportionate influence create a patronage system fraught with indebtedness.

#### VIII. Comparison with U.S. Science Administration:

- **Separation Model:** The U.S. model advocates for the separation of scientists and administrators, allowing focused attention on administrative tasks.
- **Training Focus:** Selecting and training science administrators separately enables a more dedicated approach without detracting from active scientific pursuits.

#### IX. Proposal for Change:

- **Questioning Current Roles:** Scrutinizing the efficacy of scientists in administrative roles prompts a consideration of an American middle-way approach.
- **Dedicated Administration Service:** Proposing the establishment of a dedicated science administration central service to mitigate challenges posed by the current system.

#### X. Urgent Need for Addressing Core Concerns:

- **Separate Training Emphasis:** Emphasizing the imperative of teaching and practicing administration separately to nurture the necessary administrative skills.
- **Central Role of Administration:** Recognizing the central role of the administrative setup in science establishments underscores the urgency to address these core concerns for sustained progress.

#### XI. Conclusion:

- **Risk to National Aspirations:** Without addressing these foundational issues, India's science establishment risks hindering rather than propelling the nation towards its economic and strategic aspirations.

Gearing up for change: On IMD and weather analyses having contemporary relevance

#### I. Historical Significance of India Meteorological Department (IMD):

- **Foundation and Purpose:** Established 150 years ago, the IMD initially focused on unraveling the mysteries of the southwest monsoon during colonial times.
- **Colonial Context:** Driven by practical needs, the British administration, concerned about revenues, recognized the critical influence of the monsoon on harvests.

#### II. Evolution and Comprehensive Analysis by IMD:

- **Current Scope:** The IMD now comprehensively analyzes the entire spectrum of climate and weather, including cyclones and fog.

- **Data Accumulation:** Over the years, the IMD has amassed significant meteorological data, particularly crucial for predicting the monsoon.

### III. CEEW Research on Monsoon Trends (1982-2022):

- **Changing Rainfall Patterns:** A study by the Council on Energy, Environment and Water (CEEW) reveals that monsoon rainfall is increasing in 55% of India's tehsils.
- **Geographical Distribution:** Tehsils in the Indo-Gangetic plains, northeastern India, and the Indian Himalayan region show significant changes in rainfall patterns.

### IV. Impact on Agriculture and Regions:

- **Agricultural Implications:** Changes in monsoon patterns affect kharif crops, with 68% of tehsils experiencing reduced rainfall in crucial months.
- **Geographical Concentration:** Most impacted tehsils are in the Indo-Gangetic plains, contributing over half of India's agricultural production, and the Indian Himalayan region.

### V. Deficient and Excessive Rainfall Trends:

- **District-Level Variability:** 30% of India's districts witnessed deficient rainfall over several years, while 38% experienced excessive rainfall.
- **Changing Landscape:** Traditional dry regions in Rajasthan, Gujarat, central Maharashtra, and parts of Tamil Nadu are witnessing increased rainfall.

### VI. Changes in Northeast Monsoon:

- **Regional Impact:** Northeast monsoon rain has increased over the past decade in Tamil Nadu (80% of tehsils), Telangana (44%), and Andhra Pradesh (39%).
- **Seasonal Significance:** The northeast monsoon primarily impacts peninsular India during October, November, and December.

### VII. Monsoons, Global Warming, and Research Questions:

- **Increasing Variability:** India's monsoons exhibit heightened susceptibility to prolonged dry spells and intense wet spells, prompting research into the contributions of natural variability and global warming.
- **Active Research Area:** The balance between natural variability and global warming remains an area of ongoing scientific investigation.

### VIII. Contemporary Relevance and Climate Resilience:

- **Contemporary Relevance:** Beyond historical revenue concerns, present-day analyses guide region-specific plans for climate resilience.
- **Resource Allocation:** Region-specific forecasts are crucial for directing funds and resources effectively, emphasizing the importance of prioritizing local forecasts over national ones.

### IX. Government Action and Future Steps:

- **Call for Action:** The analysis suggests a commendable step forward would be the government's prioritization of regional and sub-district forecasts to enhance climate resilience.
- **Adaptation Planning:** Such prioritization enables tailored, location-specific plans to address changing weather patterns and ensures efficient resource utilization.

## Prelims Booster

### Rahul Gandhi visits over 350 year old Vaishnavite monastery in Assam's Majuli


- 🏛️ **Event Overview:** Rahul Gandhi, Congress leader, visited the **Sri Sri Auniati Satra**, a 350-year-old Vaishnavite monastery in **Majuli, Assam**, during the Bharat Jodo Nyay Yatra, dressed in traditional attire and engaging in cultural interactions and activities.
- 🧕 **Attire and Interactions:** Rahul Gandhi was dressed in a white dhoti with an Assamese gamosa (scarf), interacting with the head of the monastery and extending an invitation to visit Delhi.
- 🎭 **Cultural Engagement:** He witnessed a traditional art form known as **Bhaona**, capturing photos of artists adorned in famous Majuli masks and participating in trying out a mask of Lord Hanuman, complete with a gada (mace) in hand.
- 🏰 **Historical Significance:** The Sri Sri Auniati Satra, established in 1663, holds cultural and religious importance in India's history.


📍 LOCATION


- 🌿 **Majuli and Satras:** Majuli is one of the world's largest inhabited river islands, housing several satras – Vaishnavite monasteries, some dating back to the 16th century, founded by Sankardeva, the father of Assamese culture.
- 🏰 **Satras' Historical Significance:** The Institution of Satra is a unique feature of Vaishnavism in Assam, serving as centres of traditional performing arts and propagation of ethics and socio-cultural ideals.
- 🌊 **Impact of Natural Disasters:** While sixty-five Satras were initially established for the propagation of ideals, only twenty-two remain in Majuli due to the devastation of flood and erosion, leading to the relocation of others to safer places.
- 🙏 **Cultural Offerings:** The satras not only serve as places of worship for Vishnu and Krishna but also host traditional bhaona performances, with young bhakats showcasing their artisan skills in crafting masks, musical instruments, hand-fans, and door frames.
- 🏰 **Notable Satras:** Auni-ati, Kamalabari, Dakshinpat, Garamur, Samaguri, Bengena-ati, and Natun Kamalabari are some of the satras worth visiting for their cultural and historical significance.


### Andhra becomes 2nd State to take up 'caste census'


- 🇮🇳 **Caste Survey in Andhra Pradesh:** The Andhra Pradesh government has initiated a 10-day-long "caste survey" to create a comprehensive caste-based database of people.  
Can states conduct census ? This issue came up during Bihar Caste Survey > A brief Summary of Patna High Court's stand -
- 🏛️ **Competence of Conducting Census:** The Union government has exclusive power to conduct a "census" based on Entry 69 of the Union List in the Constitution's Seventh Schedule, as per the petitioners.

-  **Bihar Government's Argument:** Bihar government argued that a caste census was conducted by the Centre in 2011 under Article 73, allowing the Centre's power to extend to matters on which Parliament can legislate.


-  **Comparison of Legislative Powers:** Entry 45 of the Concurrent List and Entry 94 of the Union List were compared, both conferring powers for collecting statistics to achieve economic and social planning goals under Entry 20 of the Concurrent List.

-  **Key Points from Patna High Court's Order:** The Patna High Court acknowledged the State's action as valid and initiated with due competence, emphasizing the State's legitimate aim of providing 'Development with Justice.'


-  **Protection of Rights:** The survey neither involved coercion nor violated privacy rights, passing the test of proportionality, as highlighted by the court.

-  **State's Interest:** The State's action aligns with a 'compelling public interest' and a 'legitimate State interest,' as concluded by the court. ( for more detailed understatnig " the triple-requirement test laid down in the 2017 'Justice KS Puttaswamy vs Union of India' case " should be read )

### Dera chief gets 50day parole within 2 months of furlough

-  **Rights Under Section 432 of Criminal Procedure Code 1973:**

- Parole and Furlough are rights available to prisoners under Section 432, providing the power to suspend or remit sentences.

-  **Definition and Regulation by Prisoners Acts:**


- The Prisoners Act of 1894 and Prisoners Act, 1900 define the parole and furlough systems under Sections 5(A) and 5(B).

-  **Parole System:**

- Purpose and Duration:
  - Aids prisoners' reintegration into conventional life and social rehabilitation.


- Maximum period: one month, extendable under special circumstances.

- Each state has its own rules for parole.

-  **Furlough System:**

- Entitlement and Period:
  - Every prisoner has the entitlement to furlough.
  - Duration: 14 days in a year, extendable for certain reasons after application to the prison superintendent.

- Considered a 'reward' and a remission of the sentence.
- Disallowed for certain categories of prisoners.

-  **Core Ideas Behind Parole and Furlough:**

- Social and Family Ties: Permitting prisoners to maintain social and family ties.

- Correction and Reformation: Essential for the correction behavior and reformation of the prisoner.


- Mental Equilibrium: Aims to maintain mental equilibrium and ensure the sanity of convicts.

- Humanistic Approach: Rooted in a humanistic approach towards prisoners' rehabilitation.

### How do you plan to save the Great Indian Bustard, SC asks govt.

-  **Supreme Court's Directive:**

- Directed the Centre to disclose its plans for saving the critically-endangered Great Indian Bustard by February.


-  **Reasons for Endangerment:**

- Main threat: Collision with high transmission power lines in Gujarat and Rajasthan, the natural habitat of the bustards.

-  **Balancing Act:**

- Emphasized the need for a plan balancing the preservation of the bird species with India's global commitments, particularly in reducing carbon footprints.

- Acknowledged the challenge of maintaining this balance in the context of alternative energy projects, specifically solar power.

-  **Development and International Obligations:**

- Acknowledged the area as a zone of development, recognizing India's international obligations concerning alternative energy.

- Stressed the importance of not hindering projects while ensuring the preservation of the Great Indian Bustard.

### Great Indian Bustard.


-  **Physical Features:**

- Easily distinguished by a black crown on the forehead, contrasting with the pale neck and head.

- Brownish body with wings marked in black, brown, and grey.

- Males and females generally have similar height and weight.

- Males have larger black crowns and a black band across the breast.

-  **Reproductive Behavior:**

- Breeds mainly during the monsoon season.

- Females lay a single egg on open ground.

- Males have a gular pouch used for producing a resonant booming mating call to attract females, audible up to 500 meters.

- Males do not participate in incubation or care of the young, which remain with the mother until the next breeding season.

-  **Diet and Feeding Habits:**

- Opportunist eaters with a diet that varies based on seasonal food availability.

- Feed on grass seeds, insects like grasshoppers and beetles.

- Occasionally consume small rodents and reptiles.

-  **Conservation Issues:**

- Primary Threats:

- Hunting: Prevalent in Pakistan, posing a significant threat to the species.

- Poaching: Occasional incidents outside Protected Areas.

- Collisions: With high tension electric wires, fast-moving vehicles, and free-ranging dogs in villages.

- Secondary Threats:

- Habitat Loss: Resulting from widespread agricultural expansion and mechanized farming.

- Infrastructure Development: Including irrigation, roads, electric poles, mining, and industrialization.

