

**DAILY
CURRENT
AFFAIRS
ANALYSIS**



LAKSHYA ACADEMY®

12 JANUARY 2024

1 - Bills pertaining to J&K and Puducherry's women's quota:

GS II

Government Policies and Interventions:

- **Context:**
- The Constitution (106th Amendment) Act, 2023, which provides 33% reservation for women in State and Parliament legislatures, was recently extended to the Union Territories of Jammu & Kashmir and Puducherry by two Bills passed by the Lok Sabha.
- The Government of Union Territories (Amendment) Bill, 2023 and the Jammu and Kashmir Reorganisation (Second Amendment) Bill, 2023 were presented in the Lok Sabha by the Ministry of Home Affairs.
- The two bills aim to provide women in the legislative legislatures of Jammu and Kashmir and Puducherry more opportunities to participate in and represent their communities as public representatives.
- Women's reservations in the Puducherry Legislative Assembly must be established by amending the Government of Union Territories Act, 1963 of Parliament.
- *Source* → *The Hindu*

2 - Summit of the global partnership on artificial intelligence (GPAI):

GS III

Science and Technology:

- **Context:**
- The Global Partnership on Artificial Intelligence (GPAI) Summit was opened by India's Prime Minister.
- The GPAI is an alliance of 28 countries, with India serving as its main chair in 2024. The GPAI's "New Delhi Declaration" was endorsed by the European Union.

- **Which GPAI Summit highlights stand out the most?**

- The Indian prime minister spoke on the country's AI portal, stressing the AIRAWAT programme and expressing concerns about the possible abuse of deepfake technology.
- The GPAI Summit featured a prominent display of YUVAi, with start-ups and the initiative's winners showcasing their AI models and solutions.
- To promote digital inclusiveness, the prime minister proposed leveraging AI to provide digital services in regional tongues.
- The four main themes of the four sessions held during the GPAI are innovation and commercialization, future of work, data governance, and responsible AI.
- The summit also featured a number of side events, including industry panel discussions, seminars, research symposiums, hackathons, and the Global AI Expo, that showcased advancements in AI and fostered conversation.

- **What is the GPAI's Delhi Declaration?**

- It recognises the necessity of seizing fresh opportunities and reducing hazards associated with the creation, application, and usage of artificial intelligence (AI).
- reaffirms the dedication to preserving democratic principles, human rights, and dignity.
- Emphasises the necessity of building trust, openness, accountability, and inclusion in AI.
- acknowledges AI's potential to help achieve global difficulties and the Sustainable Development Goals of the United Nations.
- promotes worldwide coordination and collaboration in the areas of AI innovation, policy, and research.
- encourages the creation of an all-encompassing framework that incorporates accepted ideas for reliable and secure AI.
- supports India's plan to create and manage the Global Public Infrastructure Repository (GDPIR) in order to exchange digital public goods.
- GDPIR was founded by the Ministry of Electronics and Information Technology (MeitY) with the purpose of acting as a comprehensive archive that would compile important perspectives and information from G20 members as well as visiting countries.
- implores stakeholders to continue their conversation about AI ethics and governance.

- **Artificial Intelligence: What Is It?**

- Artificial Intelligence (AI) is the capacity of a computer, or a computer-controlled robot, to perform jobs that are typically performed by humans because they call for human judgement and intelligence.
- Certain AI systems can equal humans in particular tasks, but none of them can complete the vast range of tasks that a typical human can.
- Machine Learning (ML) is a subset of AI, and the ideal feature of AI is its ability to reason and take actions that have the best likelihood of reaching a certain goal.

- This autonomous learning is made possible by Deep Learning (DL) algorithms, which absorb vast volumes of unstructured data, including text, photos, and video.
- **AIRAWAT: What is it?**
 - In order to create the Artificial Intelligence Research, Analytics, and Knowledge Assimilation Platform (AIRAWAT) in 2019, NITI Aayog distributed a cabinet note.
 - The government wants India to lead emerging countries in artificial intelligence (AI) and revolutionise industries including education, healthcare, agriculture, urbanisation, and transportation. One step towards this end is the development of a cloud computing infrastructure.
- **How does Deep Fake work?**
 - Artificial intelligence (AI) is used in "deepfakes," or synthetic media, to create and alter audio and visual content, primarily with the goal of tricking or misleading people.
 - Generative adversarial networks (GANs) are a technology that uses two competing neural networks, a discriminator and a generator, to construct deepfakes.
 - While the discriminator attempts to discern between actual and fake photos and videos, the generator attempts to produce fakes that appear realistic.
 - The generator adjusts its output based on the discriminator's feedback until it fools the discriminator.
 - Deepfakes need a lot of information about the source and the target, which is typically gathered from the internet or social media without the subjects' knowledge or agreement. This information can take the form of images or videos.
 - Deepfakes are a subset of Deep Synthesis, which generates text, images, audio, and video to create virtual scenes using technologies like augmented reality and deep learning.
- **What is the initiative called YUVA Ai?**
 - **About:**
 - The "YUVAi- Youth for Unnati and Vikas with AI" programme was introduced by the National e-Governance Division (NeGD) in collaboration with Intel India.
 - **Goals:**
 - To promote a deeper comprehension of AI, provide students in grades 8 through 12 across the country with the necessary skill sets and mindsets, and enable them to become human-centric AI creators and users.
 - Students can gain practical experience in understanding and identifying how AI technology can be employed to address pressing issues and promote inclusive national development through this programme.

- To provide as many students as possible with the opportunity to empower themselves and become future-ready, the programme will run continuously throughout the year.
- **Way Forward:**
- India launched the GPAI Summit, where India aspires to train school kids with AI skills for inclusive growth. The New Delhi Declaration emphasises a global AI framework founded in democracy, human rights, and ethical behaviours.
- *Source → The Hindu*

3 - Workers' Organisations and Immigrant Labourers' Welfare:

GS III

Indian Economy:

- **Context:**
- In a written response submitted to the Rajya Sabha, the Ministry of Labour & Employment recently outlined steps intended to protect the interests of unorganised labour.
- The ministry also dealt with welfare amenities for migrant workers' children.
- **Which initiatives pertaining to unorganised labour are highlighted?**
- **Life and Disability Insurance:**
- Provided under Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY).
- **About PMJJBY:**
- Rs. 2.00 Lakh in the event that the insured passes away for any cause, with an annual premium of Rs. 436.

- **About PMSBY:**

- Rs. 2.00 Lakh in the event of an accidental death or whole permanent disability, and Rs. 1.00 Lakh in the event of a partial accident-related permanent handicap, with an annual premium of Rs. 20/-.

- **Health and Pregnancy Advantages:**

- Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) provides insurance for health and maternity benefits based on deprivation and occupation.
- It provides health insurance coverage up to Rs. 5.00 lakhs per family for secondary and tertiary care-related hospitalisation.

- **Protection During Old Age:**

- The government of India introduced the Pradhan Mantri Shram Yogi Maan-dhan Yojana (PM-SYM) pension system in 2019 to give unorganised sector workers old age security. Under this scheme, unorganised workers will receive a monthly pension of Rs. 3000/-after turning 60.

- **Other Plans:**

- Public Distribution System under the National Food Security Act (NFSA) 2013 through the One Nation One Ration Card programme
- Mahatma Gandhi National Rural Employment Guarantee Act, 2005.
- Deen Dayal Upadhyay Gramin Kaushal Yojana.
- Pradhan Mantri Awas Yojana.
- Pradhan Mantri Gareeb Kalyan Rojgar Yojana.
- Mahatma Gandhi Bunkar Bima Yojana.
- Deen Dayal Antyodaya Yojana.
- Prime Minister Street Vendor's AtmaNirbhar Nidhi (PM-SVANidhi).
- Yojana Pradhan Mantri Kaushal Vikas

- The Unorganised Workers' Social Security Act of 2008 requires the government to create appropriate welfare programmes covering life and disability insurance, health and maternity benefits, old age protection, and other issues for the workers in the unorganised sector.
- The Unorganised Workers' Social Security Act of 2008 defines an unorganised worker as an individual who works from home, is self-employed, or receives compensation from the unorganised sector.
- An estimated 47 crore people are employed in the country's organised and unorganised sectors combined, of which 39 crore work in the unorganised sector, according to a 2011–12 survey conducted by the National Sample Survey Organisation.

- **What are the Children of Migrant Workers Welfare Facilities?**

- The legislation provides for the registration of certain establishments that employ Interstate Migrant Workers, the licencing of contractors, and other measures to safeguard the rights of migrant workers.
- Employees of these types of businesses are entitled to minimum salary payments, relocation and travel expenses, housing allowances, health benefits, and protective gear, among other benefits.
- The RTE Act of 2009 grants children the right to free and compulsory education.
- It requires the relevant government to offer all children in neighbourhood schools, ages 6 to 14, with free and obligatory elementary education. This requirement also extends to children of migrant workers who are from other states.

- *Source → The Hindu*

4 - Sustainability of Coordinated Heavy Rainfall in Changing Environments:



GS I

Geography related issues:

- **Context:**
- Recently, a new study has been released by Advancing Earth and Space Sciences (AGU) titled- Geographical Trapping of Synchronous Extremes Amidst Increasing Variability of Indian Summer Monsoon Rainfall, showing that Indian Monsoon has undergone major adjustments due to Global Warming.
- The study looks into synchronous extreme rainfall events that occur during the Indian Summer Monsoon Rainfall (ISMR) between 1901 and 2019. It finds that there are continuous, linked extreme hubs in Central India, which suggests that these concurrent events are concentrated geographically in the area.
- **How are India's rainfall trends going?**
- **Regular Focus on Spatial Information:**
- Even though the Indian Summer Monsoon Rainfall (ISMR) has become more variable over the last century, synchronous extreme rainfall events have always been concentrated in one particular

area of the world, mainly in Central India (CI), which stretches from sections of West Bengal and Odisha to sections of Gujarat and Rajasthan.

- Nothing has changed in this corridor between 1901 and 2019.
- This suggests that, despite overall greater variability, there is a consistent pattern of synchronised extreme events.

- **Cohesion of the Network:**

- A long-term steady synchronisation of extreme rainfall events in this region is highlighted by the strong local connections among a persistent network of highly interconnected extreme rainfall hotspots in CI.

- **Accompanying Climatic Patterns:**

- The El Niño and La Niña phenomena play a major influence in India's monsoon forecasts, although this relationship is only true roughly 60% of the time.
- El Niño Southern Oscillations (ENSO) and Indian rainfall events are connected; there is greater synchronisation during severe El Niño times and less during La Niña circumstances.

- **Consequences for Unpredictability:**

- The findings imply that despite the increasing variety and complexity of ISMR, understanding the persistent nature of extreme rainfall synchronisation in CI provides insights critical for anticipating synchronous extremes.
- During the monsoon season, this knowledge can help with the development of efficient adaptation techniques and risk management.

- **What Effects Do the Results Have on the Forecast?**

- **Examining Stationarity Again:**

- The theory that global warming has eliminated fixed features in climate systems is refuted by the Indian monsoon's capacity to synchronise periods of intense precipitation.
- It implies that even in the face of climate change, some reliable patterns—like coordinated, intense rainfall occurrences along particular corridors—remain constant.

- **Comprehending Corridor Dynamics:**

- An important insight is provided by the discovery of a physical corridor—mostly the mountain ranges that traverse Central and Western India—as a possible trapping zone for synchronised high rainfall events and monsoon depressions.

- More precise forecasts would be made possible by this idea, which would greatly improve our understanding of how and where these catastrophes occur.
- **Forecast Enhancement:**
 - The research demonstrates that enhancing forecasts of synchronised extreme rainfall events doesn't necessarily require increased model resolution or higher processing costs.
 - Rather, forecasting methodologies should change to better comprehend the dynamics of synchronisation within the current models, which could result in more accurate predictions.
- **Strategies for Reducing Risk:**
 - Precise predictions of these extensive, intense downpours are essential to reduce hazards in a number of industries, including public health, transportation, energy, agriculture, and water management.
 - The results present a chance to improve risk reduction tactics on a smaller scale by utilising improved forecasts for readiness and alleviation.
- **Making the Most of India's Resources:**
 - The report highlights India's robust computing capabilities and modelling ability, which puts the nation in a good position to take advantage of this potential for improved forecasting.
 - It draws attention to the ability to better understand synchronisation dynamics and forecasting, which could help to lessen the effects of heavy rainfall events on many industries.
- **What Elements Influence the Indian Monsoon?**
 - **The Himalayan Range:**
 - An important contributing component to the creation of India's monsoon winds is the Himalayas.
 - A low-pressure system forms in the Indian subcontinent during the summer because of the fast warming of the landmass above it.
 - Because of the Himalayas' barrier function, warm, humid air from the Indian Ocean is drawn into the area by a pressure gradient that keeps cool, dry air from the north from entering the area.
 - **Desert of Thar:**
 - The formation of monsoon winds in India is significantly influenced by the Thar Desert, sometimes referred to as the Great Indian Desert.
 - Because of the barrier posed by the Aravalli Mountain range, it receives relatively little rainfall from the Bay of Bengal branch of the monsoon. This region is known as a rain shadow location.

- Thus, very little rainfall occurs in the surrounding areas due to the Arabian branch of the monsoon, which runs parallel to the Thar Desert.
- The region's economy and agriculture may be significantly impacted by this lack of rainfall.
- In the northwest of India, the hot, dry air from the desert generates a low-pressure area that attracts moisture-laden winds from the Indian Ocean, bringing with it copious summertime rains.

- **Indian Sea:**

- The Indian Ocean is a crucial factor to the production of monsoon winds in India.
- The monsoon winds are created when the low-pressure system over the Indian subcontinent mixes with the warm, humid air from the ocean.

- *Source → The Hindu*



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