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CONTENT LIST

GS 1: ART & CULTURE, HISTORY, INDIAN SOCIETY AND GEOGRAPHY

	Topics	Syllabus	Page No:
1	9th edition of Amur Falcon Festival held in Tamenglong district	Art & culture (AT)	7

GS 2: POLITY, GOVERNANCE, SOCIAL JUSTICE, INTERNATIONAL RELATIONS/INSTITUTIONS

	Topics	Syllabus	Page No:
2	State must ensure 'ease of breathing'	Governance (IE)	9
3	To plug gaps in farm fires 'undercount', govt agencies fine-tuning 'burnt area' mapping	Governance (IE)	10

GS 3: ECONOMY, ECOLOGY, SCIENCE & TECHNOLOGY, DEFENCE, SECURITY AND DISASTER MANAGEMENT

	Topics	Syllabus	Page No:
4	India needs an environmental health regulatory agency	Environment & ecology (TH)	10

GS 1: ART & CULTURE, HISTORY, INDIAN SOCIETY AND GEOGRAPHY

1. 9th edition of Amur Falcon Festival held in Tamenglong district

Context: In a bid to espouse the cause of wildlife conservation and promote the cultural heritage of the region, the 9th Amur Falcon Festival was celebrated today under the aegis of the Tamenglong district administration, the Forest Department, and the Rainforest Club Tamenglong (RCT) at the Lower Ground of Tamenglong. Tamenglong has emerged as a safe refuge for Amur falcons, putting the district on the global map of wildlife conservation by initiating satellite-tagged programmes. The festival commenced with the 'Rih Laem', a war dance, by the Khunchung Dance Troupe, Phalong, and a cultural dance glorifying God's creation by the Puching Dance Troupe.

Key points

- **Overview:** The Tamenglong district administration in Manipur imposed an immediate ban on hunting, catching, killing, and selling Amur falcons (*Falco amurensis*).
- **Culture and People:** Tamenglong is inhabited by majority Zeliangrong Naga tribe (comprising of Rongmei, Liangmei, Zemei and Pumei) and Kukis, besides minority Hmars, Chirus and Khasis. Racially or physically and linguistically Zeliangrongs are Tibeto-Burman (Indo-Mongoloid) of Sino-Tibetan family of the Mongolian race. Based on history it is assumed that Mongoloid groups including Zeliangrong Nagas were inhabiting the upper course of the Yangtze and Howang Ho rivers in China in the prehistoric times.
- **Marriage System:** Besides normal marriage like by engagement or by elopement there are also other kinds of marriage.
 - Noumang-mei-Nou-kaao (Marriage by Service)* - With the agreement of both parties the boy stay at the girl's parents' house and stay for three to four years and live as husband and wife then finally return home.
 - Chamemei* - Here a girl is given in marriage even against her consent to a family to whom the girls parent is in debt or some obligations.
 - Naokakhaomei* - In an accidental death of a man, the nearest next brother will look after the children and remarry the wife of his brother.
- **Amur falcon:** It is a small raptor of the falcon family. Locally known as Akhuipuina, the bird arrives mainly in Manipur and Nagaland. They breed in south-eastern Siberia and Northern China and migrate long distances in large flocks to winter in Southern and East Africa. The one-way journey via India is about 20,000 km long and the birds do this twice a year.
 - Conservation efforts* - It is protected under the Wildlife Protection Act 1972 and included under its Schedule IV. Hunting of the birds or possessing its meat is punishable with imprisonment up to three years or a fine up to 25,000 or with bonds. In 2018, the forest department started a conservation programme by radio-tagging the birds to study their migratory route.
 - Threats* - Illegal trapping and killing during migration, habitat loss from agricultural practices and land reclamation.

GS 2: POLITY, GOVERNANCE, SOCIAL JUSTICE, INTERNATIONAL RELATIONS/INSTITUTIONS

2. State must ensure 'ease of breathing'

Context: Last month, India's think tank NITI Aayog reportedly proposed that coal-fired power plants could pause the installation of flue gas desulphurisation (FGD) technology, which helps to cut the polluting sulphur dioxide (SO₂) emissions from the plants. This move was reported by the council of scientific and industrial research-national environmental engineering research institute that found SO₂ emissions from the country's coal plants were not adversely impacting air quality. The NITI Aayog's proposal is emblematic of the government's failure to down air pollution not in just Delhi and the NCR, but most of North India and other critically polluted cities.

Key points

- **National Clean Air Programme:** It was launched by the Ministry of Environment, Forests and Climate Change (MoEFCC) in January 2019. It is the first-ever effort in the country to frame a national framework for air quality management with a time-bound reduction target. It seeks to cut the concentration of coarse (particulate matter (PM) of diameter 10 micrometer or less, or PM₁₀) and fine particles (particulate matter of diameter 2.5 micrometer or less, or PM_{2.5}) by at least 20%

in the next five years, with 2017 as the base year for comparison. It covers 132 non-attainment cities which were identified by the Central Pollution Control Board (CPCB).

- **Current Scenario:** The country's current, annual average prescribed limits for PM_{2.5} and PM₁₀ are 40 micrograms/per cubic metre (ug/m³) and 60 micrograms/per cubic metre.
- **New Targets:** The NCAP initially set a target of reducing key air pollutants PM₁₀ and PM_{2.5} by 20-30% in 2024, taking the pollution levels in 2017 as the base year to improve upon.
- **Effectiveness of NCAP: Achieving Targets** - An analysis of the four-year performance of the NCAP by the Centre for Research on Energy and Clean Air (CREA), concluded that only 38 of the 131 cities that signed agreements with the Centre, Urban Local Bodies (ULBs), and State Pollution Control Boards achieved their annual pollution reduction targets.

Recommendations - The CREA noted that 37 cities have completed the source apportionment studies (which list and quantify the significant sources of pollution in a city). However, most of these reports weren't available in the public domain and no city action plan had been updated with information from these studies.

- **Other initiatives:** System of Air Quality and Weather Forecasting and Research (SAFAR) Portal. Air Quality Index - AQI has been developed for eight pollutants viz. PM_{2.5}, PM₁₀, Ammonia, Lead, nitrogen oxides, sulphur dioxide, ozone, and carbon monoxide. Graded Response Action Plan (for Delhi).

For Reducing Vehicular Pollution - BS-VI Vehicles, Push for Electric Vehicles (EVs), Odd-Even Policy as an emergency measure (for Delhi).

National Air Quality Monitoring Programme (NAMP) - Under NAMP, four air pollutants viz. SO₂, NO₂, PM₁₀, and PM_{2.5} have been identified for regular monitoring at all locations.

- **Way forward: Changing Approach** - India needs to change its approach and bring out effective policies to improve air quality and reduce pollutants to levels considered acceptable by the World Health Organisation (WHO).

Close Coordination Required - Curbing air pollution requires not only tackling its specific sources, but also close coordination across local and national jurisdictional boundaries. Regional cooperation can help implement cost-effective joint strategies that leverage the interdependent nature of air quality.

Q. In the cities of our country, which among the following atmospheric gases are normally considered in calculating the value of Air Quality Index?

1. Carbon dioxide
2. Carbon monoxide
3. Nitrogen dioxide
4. Sulfur dioxide
5. Methane

Select the correct answer using the code given below:

- | | |
|---------------------|----------------------|
| (a) 1, 2 and 3 only | (c) 1, 4 and 5 only |
| (b) 2, 3 and 4 only | (d) 1, 2, 3, 4 and 5 |

GS 2: POLITY, GOVERNANCE, SOCIAL JUSTICE, INTERNATIONAL RELATIONS/INSTITUTIONS

3. To plug gaps in farm fires 'undercount', govt agencies fine-tuning 'burnt area' mapping

Context: To plug gaps in farm fires data, government agencies, including Indian Agriculture Research Institute (IARI) and National remote sensing centre (NRSC), are working to develop a methodology to fine-tune and standardise mapping of "stubble burnt areas". The agencies are using European Sentinel-2 satellite for the surveillance, which provide optical images, near-infrared images and short-wave infrared 1 & 2 images, helping in mapping burn scars on fields. On January, CAQM formed a committee was formed under NRSC to standardize a protocol for mapping areas burnt by paddy stubble fire.

Key points

- **Farm Fires:** Farm fires usually refer to deliberate fires set on agricultural fields, primarily after the harvest season to clear crop residue, particularly in regions practicing stubble burning. These fires often involve burning leftover straw, stubble, or crop residues to prepare fields for the next planting season quickly. However, farm fires can also occur accidentally due to machinery malfunctions or other unintended causes.
- **Indian Agricultural Research Institute's (IARI):** It is a Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory issues a daily report on paddy residue fires.
Background - It was set up in 2013, with the primary purpose of monitoring crop conditions against extreme climatic events.
- **Data Collection Through Satellites:** Three sensors aboard three different NASA satellites: one called Visible Infrared Imaging Radiometer Suite (VIIRS) aboard the Suomi NPP satellite, and two called Moderate Resolution Imaging Spectroradiometer (MODIS), aboard the Terra and Aqua satellites, collect this data by recording land surface temperatures. In the past five years, the lab has used a different satellite set to map burned areas. Sentinel-2 satellites, part of the European Space Agency, serve this purpose.
- **Monitoring Protocol:** IARI acquires satellite data from its ground station and the National Remote Sensing Centre, ensuring year-round monitoring of farm fires across the country. Prior to 2021, varied methodologies led to discrepancies in recorded farm fire events across different monitoring centres.
- **Identifying Paddy Fires:** Identifying paddy fires involves distinguishing them from forest fires or those originating from industries. Satellites determine active paddy fires by detecting an increase in land surface temperature above specific thresholds, distinguishing fire events from surroundings.
- **Limitations and Challenges:** *Weather Influence* - Climatic conditions, particularly cloud cover and water vapor, can obstruct satellite sensors, hindering accurate readings and data acquisition.
Seasonal and Time-of-Day Variability - Changes in seasons and discrepancies between day and night conditions affect the effectiveness of fire detection thresholds, creating hurdles for consistent monitoring.
- **Conclusion:** Understanding the complexities and limitations of data collection is crucial in devising effective strategies to address farm fires and mitigate their impact on environmental and public health concerns. Continual advancements in technology and methodology remain integral to refining monitoring approaches for better insights and proactive interventions.

4. India needs an environmental health regulatory agency

Context: The 2024 Conference of Parties (COP 29) ends in Baku, Azerbaijan today. As a global voice for developing countries, India will push for ambitious climate mitigation financing from developed nations. As a nation, India continues to experience rapid economic growth, so the interdependencies between climate, environment, health, and the economy are undeniable but capacities to address these issues holistically are limited. It is time for India to establish an environmental health regulatory agency (EHRA), which could lead to more comprehensive and cohesive environmental governance that focuses simultaneously on pollution control and health risk mitigation.

Key points

- **Overview:** Having such an agency in India, which it currently lacks, would look at the interlinked issues of climate, environment, health and the economy in a holistic way.
- **Environmental health regulator:** An environmental health regulator is a governmental or quasi-governmental agency that regulates the environment, hazardous substances, or the protection of human health and safety. These regulators can be at the federal, state, or local level.
Responsibilities - Enforcing environmental laws and regulations, protecting public health and the environment, Improving degraded environments, Limiting the use of pollutants, Setting safe tolerance levels for pollutants in food, water, and animal feed.
- **Environmental Protection Agencies:** *United States Environmental Protection Agency (EPA)* - The EPA is a federal agency that protects the environment and human health. It was founded in 1970 by President Richard Nixon. The EPA's responsibilities include-
 - Creating and enforcing environmental laws.
 - Inspecting the environment.
 - Providing technical support to reduce threats.
 - Supporting recovery planning.
 - Regulating air quality, water resources, hazardous substances, and waste management.
- **Effectiveness of Environment Protection Act, 1986:** The Act gives the central Government a sweeping power to conserve the environment. But today we see our rivers turned into open sewers in many places and air is badly polluted which shows that there are many issues with the Act. The Act provides for the collection and dissemination of information regarding environmental pollution, which the Government has failed to do so. In its absence, a community may not be aware that a potentially hazardous operation is situated in its midst. Further, the Act gives the public significant powers to enforce the Act, but only Government officials are given the power under the Act to collect samples needed as evidence of violation of the Act. All the issues like the comparative late rollout of better emission control norms for fuels, failure to develop a mass transport system, failure to control river pollution, Inefficient and insufficient effluent treatment plants etc., among others, have led to the present situation.
- **Present Clause in EPA, 1986:** The Environment Protection Act currently says that violators will be punishable with imprisonment up to five years or with a fine up to Rs 1 lakh, or with both. Were violations to continue, an additional fine of up to Rs 5,000 would be levied for every day during which such failure or contravention continues after the conviction. There's also a provision to extend jail terms up to seven years.