



19 February, 2024

International Light Pollution Guidelines

Context: The Convention on Migratory Species and Wild Animals (CMS) has developed International Guidelines on Light Pollution for migratory species.

➤ Background:

- Light pollution emerged as an issue during the Thirteenth Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS COP 13) four years ago.
- Guidelines were developed following CMS COP14 in Uzbekistan's Samarkand on February 17, 2024.
- Recognized the conservation value of natural darkness equal to clean water, air, and soil.

➤ Impact of Light Pollution:

- Artificial light emissions increased by over 49% between 1992 and 2017, significantly impacting wildlife.
- Can cause behavioural and psychological changes in migratory species.



➤ Guidelines Overview:

- Adapted from the 'National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds', developed by the Government of Australia in 2020.
- Recommend reducing light pollution to minimize its effect on wildlife.
- Emphasize conducting environmental impact assessments to understand the effects of artificial light on species' behaviour, migration, and reproduction.

➤ Best Practices:

- Usage of best practices in lighting, including managing light time, colour, and intensity.
- Recommendation to avoid light spill and use non-reflective, dark-coloured surfaces.
- Suggest avoiding specific colour wavelengths.

➤ Management of Light Pollution:

- Recommend avoiding lighting in the 20-km radius of wildlife habitats.
- Provide information on managing existing light pollution.

➤ Impact on Wildlife:

- Birds, both marine and terrestrial, can be affected by lights up to 15 km away, leading to disorientation and collision.
- Artificial light can disrupt foraging, nesting, and migration patterns of birds, leading to adverse effects on reproduction.
- Exposure to white light can increase stress hormone levels in songbirds, affecting reproduction.

- Marine turtles may fail to hatch if beaches are lit, impacting their survival.
- Other species like mammals, reptiles, and fish can also be affected.

➤ Success Stories:

- Gorgon Liquefied Natural Gas Plant on Barrow Island in Western Australia successfully managed lighting to reduce skyglow and aid marine turtle management.
- Migratory short-tailed shearwaters on Phillip Island in Victoria, Australia, benefited from effective lighting management practices.

National Commission on Farmers (NCF), 2004

Context: Farmers are demanding a legal guarantee for Minimum Support Price (MSP) based on recommendations from the National Commission on Farmers.

➤ Background:

- Agricultural scientist M.S. Swaminathan, posthumously awarded Bharat Ratna this year, was pivotal in transforming Indian agriculture in 1960s-70s.
- National Commission on Farmers (NCF) formed under Swaminathan's leadership on November 18, 2004, by Ministry of Agriculture.
- Commission had full-time members: Dr. Ram Badan Singh and Y.C. Nanda; part-time members: Dr. R.L. Pitale, Jagadish Pradhan, Chanda Nimbkar, and Atul Kumar Anjan; and member secretary Atul Sinha.

➤ Terms of Reference:

- Commission tasked with suggesting comprehensive strategy for food and nutrition security.
- Directed to enhance productivity, profitability, and sustainability of major farming systems in India.
- Reflective of Common Minimum Programme of Congress-led UPA government.

➤ Reports Submitted:

- Between December 2004 and October 2006, NCF submitted five reports totalling 1,946 pages.
- Reports sympathetic to farmers, included recommendations on Minimum Support Prices (MSP), among others.

➤ First Report Highlights:

- Title: "Serving Farmers and Saving Farming".
- Stressed on acute agricultural distress, advocated support for working women in agriculture, proposed establishment of Farm Schools.

➤ Second Report Highlights:

- Titled "From Crisis to Confidence".
- Recommended code of conduct for contract farming, advocated amendments in state APMC Acts and Essential Commodities Act.
- Recommendations aligned with pro-market reforms, similar to laws introduced by Modi government in 2020.

➤ MSP Recommendations:

- Commission did not recommend MSP based on C2 plus 50% as demanded by farmers.

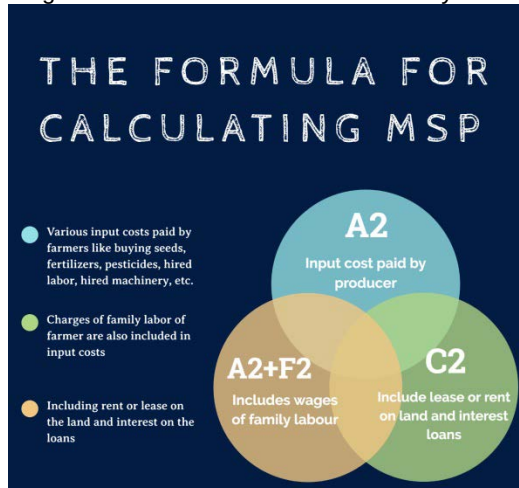
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- Urged avoidance of delays in MSP issuance and improvements in implementation across regions.
- Highlighted complexities in determining cost of production and urged consideration of various factors by CACP.



➤ Overall Recommendations:

- Recommended MSP to be at least 50% more than weighted average cost of production.
- Called for CACP to be an autonomous statutory body ensuring remunerative prices for agricultural commodities.
- Aimed for farmers' net income comparable to civil servants.

Naughty Boy

Context: On February 18, ISRO launched INSAT-3DS, a new-generation meteorological satellite, for advanced monitoring of Earth's surface, atmosphere, oceans, and environment.

➤ Launch of INSAT-3DS Satellite:

- INSAT-3DS was launched by ISRO on February 18, 2024, to enhance monitoring of Earth's surface, atmosphere, oceans, and environment.
- It aims to augment the capabilities of existing meteorological satellites and improve weather and climate prediction services, early warnings, and disaster management.

➤ Focus on GSLV Rocket:

- INSAT-3DS was carried into its intended geostationary orbit by the GSLV-F14 rocket.
- GSLV is one of ISRO's main rockets, alongside PSLV and LVM3, but it has faced challenges, earning it the nickname "naughty boy."
- Out of 15 GSLV launches before this, four were unsuccessful, mainly due to issues with its cryogenic engine.

➤ Launch Vehicle Mark-3 (LVM-3):

- Previously known as the Geosynchronous Satellite Launch Vehicle (GSLV) Mark-III, the recent launch of 36 satellites marked the sixth mission of India's heaviest rocket, LVM-3.
- It recently conducted the second dedicated commercial satellite mission undertaken by NewSpace India Limited (NSIL) for Network Access Associates Ltd (OneWeb).

• What is GSLV?

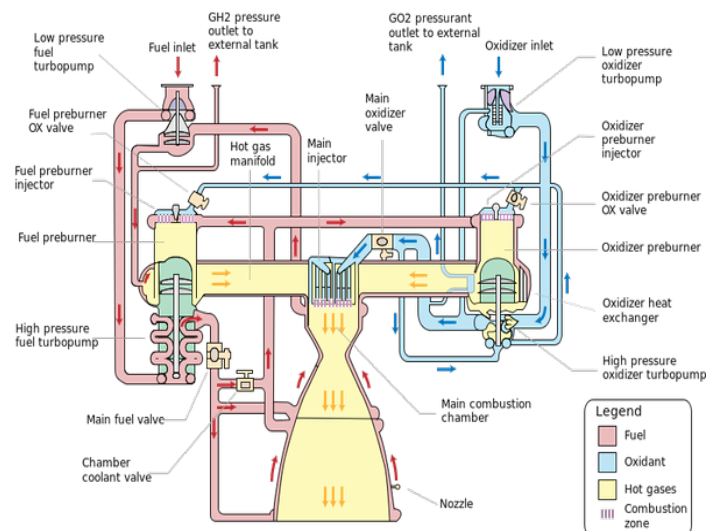
- GSLV is a 3-stage space launch vehicle operated by the Indian Space Research Organisation (ISRO) to launch satellites and other space objects into Geosynchronous Transfer Orbits (GTO), approximately 37,000 km above Earth.
- The third stage of this vehicle uses a Cryogenic engine, which utilizes liquefied oxygen and hydrogen as fuel for propulsion.
- GSLV has been specifically designed for launching communication satellites into orbit.
- It is capable of delivering satellites into higher elliptical orbits, particularly the Geosynchronous Transfer Orbit (GTO).

➤ Challenges with GSLV:

- GSLV's cryogenic engine, reverse-engineered from a Russian design, has been a source of concern for ISRO due to its high failure rate.
- Liquid hydrogen is used as fuel, but handling it at extremely low temperatures poses technical challenges.
- The original deal with Russia for cryogenic engines was canceled due to international pressure, leading to India's efforts to develop indigenous cryogenic technology.

➤ Indigenous Cryogenic Technology:

- India has successfully developed its own cryogenic engine, used in the LVM3 rocket, which has had seven successful flights.
- This indigenous technology is considered more reliable compared to the reverse-engineered cryogenic engine used in GSLV.
- ISRO scientists have greater expertise in managing the indigenous cryogenic technology.



➤ Future Challenges and Prospects:

- GSLV's successful launch of INSAT-3DS has alleviated some concerns, but its performance will face a crucial test with the upcoming NISAR satellite mission.
- NISAR, a collaboration between ISRO and NASA, will be a prestigious mission for GSLV and will determine its future reliability and capabilities.

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NEWS IN BETWEEN THE LINES

APEDA



Recently, the Agricultural and Processed Food Products Export Development Authority, APEDA has facilitated the export of bananas from India to Russia via sea.

About APEDA:

- The Agricultural and Processed Food Products Export Development Authority (APEDA) is a **statutory body** that promotes the export of agricultural products and processed food products from India.
- It is an **apex organization under the Ministry of Commerce and Industry, Government of India.**
- It was established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act, **1985.**
- APEDA's responsibilities include inspecting **meat and meat products, improving packaging** and enhancing marketing of **scheduled products** outside India.
- Scheduled products include **fruits, vegetables, meat, poultry, dairy products, confectionery, biscuits, bakery products, honey, jaggery, etc.**
- Its headquarter is in **New Delhi.**

Jnanpith Award



Celebrated Urdu poet Gulzar and Sanskrit scholar Jagadguru Rambhadracharya have been selected for the 58th Jnanpith Award recently.

About Jnanpith Award:

- The Jnanpith Award is **India's highest literary award**, given annually to an author for their **"outstanding contribution towards literature"**.
- It is **presented by the Bharatiya Jnanpith**, which was established in **1944** and first awarded in **1965.**
- The award is given to writers in **any of the 22 "scheduled languages"** recognized in the Indian Constitution and, from **2013, in the English language.**
- Recipients of the Jnanpith Award receive a **cash prize of ₹11 lakh, a statue of Vagdevi and a citation.**

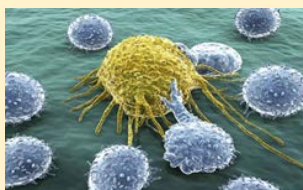
Ultradian rhythms



About Ultradian rhythms:

- Ultradian rhythms are **biological patterns** recurring more frequently than once every **24 hours.**
- Unlike circadian rhythms, which follow a 24-hour cycle, ultradian rhythms occur more frequently, influencing processes such as **heartbeat, breathing, hormonal release and brain-wave activity.**
- They are notably observed in the sleep cycle, characterized by alternating periods of rapid eye movement (**REM**) and non-REM sleep, with each cycle lasting around 90 minutes.
- These rhythms **play a crucial role in orchestrating essential bodily functions, including physical restoration, memory consolidation** during non-REM sleep, and dreaming during REM sleep.
- They influence patterns of hormone release, such as **growth hormone, cortisol, and insulin, essential for regulating metabolism, energy levels and stress** responses throughout the day.

T Cells



Recently, the scientists have engineered a new variant of cancer-fighting T cells that can suppress multiple myeloma tumours in mice while showing superior persistence and endurance compared with standard CAR T cell designs.

About T Cells:

- T cells are a **type of white blood cell that are part of the immune system.**
- They are **also called T lymphocytes and thymocytes.**
- These cells play a vital role in both components of **active immunity**, including cell-mediated and to some extent humoral immunity.
- They express a receptor with the potential to recognize diverse antigens from **pathogens, tumors and the environment.**
- There are two main types of T cells: **Cytotoxic T-cells destroy infected cells**, while **Helper T-cells send signals** directing other immune cells to fight infection.
- T cells are also implicated as major drivers of many inflammatory and autoimmune diseases.
- The **immune system requires protein for T-cell production**, which can be obtained from protein-rich foods such as **skinless chicken, fish, eggs, lentils, beans and soy.**

Personality in News

Gulzar

Gulzar (18 August 1934-till date):

Sampooran Singh Kalra, popularly known as Gulzar, is considered one of the finest Urdu poets of his generation.

Contributions:

- Gulzar is renowned for his work in films like **"Slumdog Millionaire,"** for which he penned the lyrics of the **song "Jai Ho"** that received an Oscar in **2009** and a Grammy in **2010.**
- He is known for his work in **Maachhis, Omkara, Dil Se, Guru and Aandhi.**
- He has also directed classics such as **Koshish, Parichay, Mausam and Ijaazat**, as well as the television serial **Mirza Ghalib.**

Awards and Honours: He has received **Sahitya Akademi Award for Urdu (2002), Dadasaheb Phalke Award (2013), Padma Bhushan (2004)** and at **least five National Film awards** for his works.

Ethical Values: Humanism, Integrity, Social Consciousness, Honesty, etc.



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Personality in News

Jagadguru Rambhadracharya

Jagadguru Rambhadracharya (14 January 1950-till date)

- Pandit Giridhar popularly known as **Jagadguru Ramanandacharya Swami Rambhadracharya** is a prominent Indian Hindu spiritual leader, educator, Sanskrit scholar, poet, author and philosopher.
- He has been **blind since the age of two months and has never used Braille** or any other aid for learning or composing.

Contributions:

- He is the founder and head of **Tulsi Peeth** (a religious and social service institution named after Saint Tulsidas) at Chitrakoot in Madhya Pradesh and has been holding the position of one of the four Jagadguru Ramanandacharyas of the Ramananda sect since **1982**.
- He has authored more than **100 books and texts, including four epics**.
- He is **proficient in 22 languages**, including Sanskrit, Hindi, Awadhi and Maithili and is known for his spontaneous poetry and writing in multiple languages.

Award:

He received the **Padma Vibhushan in 2015** for his significant contributions to literature and spirituality.

Ethical Values: Compassion, Spirituality, Humanity, Dedication, etc.



Place in News

Trinidad and Tobago

Recently, the workers from Oil Mop Environmental Services (OMES) were seen pumping out oil from a spill at Lambeau Village river mouth in Tobago Island, Trinidad and Tobago, prompting the country to consider an international emergency declaration due to its environmental impact.

Trinidad and Tobago
(Capital: Port of Spain)

Location: Trinidad and Tobago, officially the Republic of Trinidad and Tobago is a **twin island country** located in the southernmost part of the Caribbean.

Boundaries: Trinidad and Tobago shares its maritime boundaries with **Barbados** (East), **Grenada** (Northwest) and **Venezuela** (South and West).

Physical Features:

- The highest point in Trinidad and Tobago is the **El Cerro del Aripo**, also known simply as Mount Aripo.
- Trinidad and Tobago is home to several rivers, including the **Caroni, Ortoire and Nariva rivers**, which play vital roles in the islands' ecology and hydrology.
- The world's largest natural deposit of **asphalt** (black or brown petroleum-like material that has a consistency varying from viscous liquid to glassy solid) located in southwestern Trinidad.



POINTS TO PONDER

- In which state is the Kanha Tiger Reserve, recently making headlines, located? - **Madhya Pradesh**
- Where did the 16th World Social Forum 2024 meeting take place? - **Kathmandu**
- Which state's initiative is the Mukhyamantri Kanya Sumangala Yojana, recently in the news? - **Uttar Pradesh**
- Which bank recently secured the title of 'Best Technology Bank of the Year Award'? - **South Indian Bank**
- Which country is set to launch the 'Dream of the Desert' train in the Middle East? - **Saudi Arabia**

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