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Naming of Craters on Mars

Recently, scientists at the Physical Research Laboratory (PRL) discovered three craters on Mars.

- The 3 craters situated in the ***Tharsis volcanic region*** have been named for
  - Renowned cosmic ray physicist late Devendra Lal
  - The towns of Mursan, Uttar Pradesh and
  - Hilsa, Bihar.

Tharsis is a vast volcanic plateau centered near the equator in the western hemisphere of Mars. The region is home to the largest volcanoes in the Solar System.

- The naming is approved by ***International Astronomical Union (IAU)***.
- The discovery was made within the Mangala crater of Mars using ***SHARAD (Mars SHAllow RADar sounder)***.

SHARAD is a subsurface sounding radar mounted on the Mars Reconnaissance Orbiter (MRO) probe.

- The discovery of the craters provided compelling evidence that water moved large volumes of sediment into the newly discovered Lal crater.
- It also confirmed that Mars was once wet and water has flown on its surface.
- **Lal crater –** It is the biggest among the 3 craters, entire area is covered with lava.
- **Mursan crater-** It is superimposed on the ***eastern side*** of the rim of the Lal crater.
- **Hilsa crater-** It is superimposed on the ***western side*** of the rim of the Lal crater.

International Astronomical Union (IAU)
• The IAU is an apex governing international professional astronomical activities worldwide. • **Established-** 1919. • **Headquarters-** Paris, France. • **Objective-** To promote and safeguard astronomy in all its aspects (including research, communication, education and development) through international cooperation. • **Member-** IAU membership spans 92 countries, ***India is a member*** of the International Astronomical Union.

References

1. The Indian Express | Craters on Mars
2. IAU | About

Nagarhole Tiger Reserve

Recently, Ashwatthama, a Dasara elephant, died due to alleged electrocution in Karnataka.

- **Location -** Nagarahole is an important Tiger Reserve in ***Karnataka***, supporting the highest number of wild tigers in India and single largest Asiatic elephant population in the world.
- It is previously known as ***Rajiv Gandhi National Park.***
- Nagarahole is contiguous with Wayanad wildlife sanctuary (Kerala) to the south and Bandipur Tiger Reserve to its south eastern parts.
- **Established in –** It is established as a wildlife sanctuary in 1955 and was upgraded into a national park in 1988.
- **Reservoirs -** The Kabini and Taraka reservoirs are large waterbodies in the park.
- ***River Kabini*** separates the Nagarahole & Bandipur tiger reserve.
- **Tiger population-** Nagarahole is acclaimed as one of the high-density tiger populations in the country after Corbett & Kaziranga tiger reserves respectively.
- It is part of ***Nilgiri Biosphere Reserve***, one of the oldest and largest conservation areas in the world.
- It was declared as the ***37th Tiger reserve*** under Project Tiger in 1999.
- **Flora -** The forests are interspersed with Marshy Swamps called 'Hadlu', characetrised by open grassy lands with scattered presence of stunted specimens.
- **Fauna –**Leopard, Asiatic Wild Dog, Sloth Bear, Asiatic Elephant Gaur, Sambar, Chital, Muntjac, Four Horned Antelope, Wild Pig Mouse Deer and South-western langur.

References

1. The Indian Express| Nagarhole Tiger Reserve
2. NTCA | Nagarahole Tiger Reserve

Microalgae

Scientists at the CSIR-Indian Institute of Chemical Technology (IICT) have identified microalgae as a potential protein supplement.

- **About-** Microalgae are ***microscopic, single-celled*** organisms that belong to a diverse group of microorganisms called algae.
- **Size** - It can range from a few micrometers (µm) to a few hundreds of micrometers, they don't have roots or stems.
- **Diversity and Types-**

    - **Green Algae-** Such as Chlorella and Spirulina.
    - **Diatoms-** Have intricate silica shells.
    - **Blue-Green Algae (Cyanobacteria)** - Like Spirulina.
    - **Red Algae**- Used in agar production.
    - **Golden Algae**- Such as Chrysophytes.

- **Photosynthetic Nature -** Algae are mostly photosynthetic in nature. They are also important for carbon sequestration, as they can absorb carbon dioxide from the atmosphere through photosynthesis.
- **Habitat-** Microalgae are found in diverse habitats including freshwater, marine environments, soil, and even ***extreme environments like hot springs and polar regions.***
- **Significance -** Microalgae play a crucial role in the ecosystem as they form the base of the food chain, providing nutrients for various organisms.
- **Nutrition-** Rich source of proteins, vitamins, minerals, and omega-3 fatty acids.
- **Nutritional Supplements-** ***Spirulina and Chlorella*** are consumed as dietary supplements due to their high nutritional value.

Chlorella Growth Factor (CGF)
• Scientists at CSIR-IICT have identified Chlorella Growth Factor (CGF), extracted from ***Chlorella sorokiniana microalgae***, as a valuable ingredient for food and feed. • Chlorella's nucleus contains a unique substance produced during photosynthesis, packed with peptides, amino acids, nucleotides, polysaccharides, vitamins, and minerals. • CGF, rich in *amino acids and high-quality protein*, shows great potential as an alternative protein source for both humans and animals.

Reference

The Hindu | Microalgae

Global Gender Gap Report 2024

Recently, the Global Gender Gap Report 2024 was released by the World Economic Forum (WEF).

- **About-** The Global Gender Gap Index ***annually*** benchmarks the current state and evolution of gender parity.
- **Released by -** World Economic Forum (WEF).
- **Adoption -** Adopted in 2006.
- It benchmarks gender parity across ***146*** countries.
- **Four Parameters**

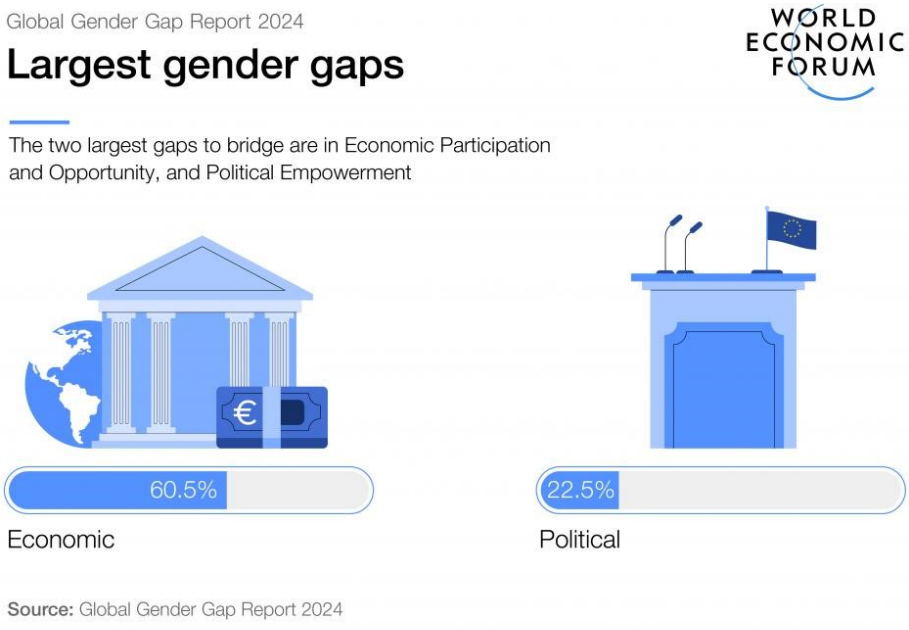


- It measures scores on a 0 to 100 scale and scores can be interpreted as the distance covered towards parity (i.e. the percentage of the gender gap that has been closed).

Highlights of the report, 2024

Global

- The 2024 Global Gender Gap Index highlights that while ***no country*** has achieved full gender parity.
- Iceland is ranked ***1st***, most gender equal country and has been leading the index for a decade and a half.
- European economies occupy 7 spots out of the global top 10.
- ***Bangladesh*** is the 1st country in the Southern Asia to get a double-digit rank of 99.
- The world has closed *68.5% of the gender gap*, indicating progress toward gender equality, but underlining the need for ongoing efforts.
- **Political disparity** – It is high in entire South Asia although the region has moved 4% points towards political parity since 2006.
- **Health and Survival gap-** It has closed by 96%.



India's status in 2024

- **Rank-** India has been ranked ***129th*** out of 146 countries, a decline from its previous position of 127th in 2023.
- India ranked is the ***3rd-lowest*** among the ***South Asian*** economies, lower than Bangladesh, Nepal, Sri Lanka, and Bhutan.

Global Gender Gap Index rankings by region, 2024

Southern Asia

Economy	Rank		Score
	Regional	Global	
Bangladesh	1	99	0.689
Nepal	2	117	0.664
Sri Lanka	3	122	0.653
Bhutan	4	124	0.651
India	5	129	0.641
Maldives	6	132	0.633
Pakistan	7	145	0.570

- **Political Empowerment-** India has better representation of women as heads of state compared to ***ministerial positions*** and parliament.
- Women hold *40.7% of head-of-state* positions but only 6.9% in ministerial positions and 17.2% in parliament.
- Only 2 out of 30 Union ministers in the newly formed Indian cabinet are women.
- The number of female ministers in the Central Council of Ministers has decreased from 10 to 7.
- **Economic Participation-** India has made progress in economic participation and opportunity but still ranks low at ***142nd place***.
- **Education-** Although women in India have high enrolment rates in primary, secondary, and tertiary education, there's still a significant gender gap in literacy rate (17.2% points).
- India ranks ***124th globally in this indicator.***

References

1. Down to Earth | Global Gender Gap Report 2024
2. Weforum | Global Gender Gap Report 2024

Renaming of sites in Uttarakhand

The Centre approved the Uttarakhand government's proposal for renaming the Joshimath and Kosiyakutoli.

- **New name-**
  - Joshimath tehsil to Jyotirmath in Chamoli district
  - Kosiyakutoli tehsil to Pargana Shri Kainchi Dham in Nainital district
- **Objective-** To enhance the ***religious and cultural significance*** of these areas, in a state that is already a major destination for religious tourism.
- **Approved by**- The Union Ministry of Science and Technology with No Objection Certificate.
- **Constitutional provision-** ***Article 3*** of the Indian Constitution deals with the formation of new States and alteration of areas, boundaries or names of existing States.
- **Joshimath tehsil-** The name "Jyotirmath" comes from the divine light of knowledge he is said to have attained, with 'jyoti' meaning divine light.
- Jyotirmath is one of the 4 cardinal mathas (monasteries) that 8th-century philosopher ***Adi Shankaracharya*** is believed to have established across India to promote the Advaita Vedanta philosophy.
- The Jyotirmath was established for the preservation and dissemination of spiritual knowledge and practices.
- **Kosiyakutoli tehsil-**Kosiyakutoli came to be known for its association with Neem Karoli Baba and the Kainchi Dham Ashram he founded in 1962.
- In the name "Kosiyakutoli", ***"Kosi" refers to the river*** of the same name which flows through the Nainital district and is important for the Kumaon region of Uttarakhand.

Reference

The Indian Express | Renaming of sites in Uttarakhand

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