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Daily Current Affairs Encyclopedia

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National and International News

World Air Quality Report 2023

2023 World Air Quality Report

Region & City PM2.5 Ranking

Context:

- According to the IQAir's (Swiss air quality monitoring body) 2023 World Air Quality Report, India was declared as the third-most polluted country, following Bangladesh and Pakistan.
- With an average annual PM2.5 concentration of **54.4 micrograms per cubic meter**, India's air quality is a **severe concern**.
- In 2022, India was ranked the eighth-most polluted country.

Top 50 Polluted Cities Feature Indian Metropolitans

- Out of the report's list of the **top 50 most polluted cities**, a **staggering 42 cities** were located in India.
- **Begusarai in Bihar** topped the chart as the most polluted metropolitan area in 2023, followed by **Guwahati and Delhi**.

Other Significant Findings of the Report

- The report highlighted the **air quality data gathered from 7,812 locations in 134 countries**.
- The top five most polluted countries in 2023 were **Bangladesh, Pakistan, India, Tajikistan, and Burkina Faso**.
- Seven countries achieved the WHO annual PM2.5 guideline of an average of **5 µg/m³ or less**, namely **Australia, Estonia, Finland, Grenada, Iceland, Mauritius, and New Zealand**.
- **Africa remains deprived of air quality data**, with one-third of the population lacking access.
- Nine out of the top ten most polluted cities belong to India.
- **China recorded a 6.3% PM2.5 rise in 2023**, amounting to 32.5 micrograms after experiencing declines for five consecutive years.
- **Canada emerged as the most polluted country in North America for the first time**, with the region's 13 most polluted cities.



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Barberton Greenstone Belt



Context:

- A new study has **unearthed evidence of some of the earliest known earthquakes in 3.3-billion-year-old rocks**, revealing insights into the early days of Earth's plate tectonics.
- **The rocks also hint at the conditions present when life first evolved on our planet.**

About:

- The study focused on the **Barberton Greenstone Belt, a complex geological formation in southern Africa, which holds one of the most extensive records of Earth's history between 3.2 billion and 3.6 billion years ago.**
- Researchers discovered **similarities between the Barberton Greenstone Belt and younger rocks in New Zealand** that experienced earthquake-triggered submarine landslides along the Hikurangi subduction zone.
- The findings suggest that **massive earthquakes shaped the Barberton Greenstone Belt over millions of years, indicating that plate tectonics and associated geological events played a significant role in the early history of Earth.**
- While there is no consensus on when plate tectonics began, the researchers believe that earthquakes and the energy they released could have contributed to creating conditions suitable for the emergence and survival of life.

Developing Countries Trading Scheme (DCTS)

Context:

- The **Directorate General of Foreign Trade (DGFT)** has issued a **trade notice highlighting the need for Indian exporters to follow new UK rules under the Developing Countries Trading Scheme (DCTS) to avail duty concessions on shipments to the UK.**

Key features:

- The DCTS benefits **65 developing and least developed countries, excluding China.** Key features include reduced tariffs on various Indian products and simplified qualification processes with clear origin rules.
- India is in the **"Standard Preferences" category under DCTS**, enjoying benefits though not as extensive as those granted to the poorest countries.
- Products exceeding a specific export limit to the UK don't receive lower tariffs and are removed from the scheme.
- **The new 6% limit on the UK's total imports affects some Indian products like textiles, with £748 million worth of exports now taxed at the regular rate instead of the preferential rate under DCTS.**



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Astronomers Detect Seven Potential 'Ghost Particles' Passing Through Earth



Context:

- Scientists, using data from the **IceCube Neutrino Observatory in Antarctica**, have possibly discovered evidence for **astrophysical tau neutrinos, often termed "ghost particles"** due to their elusive nature.

Key points:

Neutrinos:

Neutrinos are the most abundant particles that have mass in the universe. Every time atomic nuclei come together (like in the sun) or break apart (like in a nuclear reactor), they produce neutrinos. A neutrino is a fermion that interacts only via weak interaction and gravity.

IceCube Neutrino Observatory:

- The **IceCube Neutrino Observatory** is the first detector of its kind, designed to observe the cosmos from deep within the **South Pole** ice.
- An international group of scientists responsible for the scientific research makes up the IceCube Collaboration.
- **IceCube searches for nearly massless subatomic particles called neutrinos.**
- These high-energy astronomical messengers provide information to probe the most violent **astrophysical sources: events like exploding stars, gamma-ray bursts, and cataclysmic phenomena involving black holes and neutron stars.**

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