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DAILY pre PARE
Current affairs summary for prelims

20 April, 2024

Google Search's Algorithm

Context: *Rand Fishkin, CEO of marketing research firm SparkToro and SEO expert, received an anonymous email claiming access to Google's Search algorithm API documents.*

➢ Google Search Algorithms

- Complex mechanisms used to retrieve information from Google's search index.
- Sift through billions of pieces of content using phrases and keywords that match the query.
- Details of the algorithm are private; use hundreds of criteria like backlinks, page speed, and content quality.
- Regularly updated to improve search quality and counter spammers.

Search Process

➢ Crawling

- Web crawlers discover URLs on the internet and examine their content.
- Crawlers are programs that automatically index content.

Indexing: Content in URLs is tagged with attributes and metadata for categorization.

Searching and Ranking: User enters a query; search engine ranks and returns relevant content.

How Google's Algorithm Works

➢ Meaning

- Uses language models to interpret query words and match them to useful content.
- Corrects spelling, uses synonyms, and understands query intent (e.g., local searches).

➢ Relevance

- Assesses relevance using aggregated and anonymized interaction data.
- Exact keyword matches in content signal strong relevance.

➢ Quality

- Evaluates expertise, authoritativeness, and trustworthiness.
- Signals include backlinking from prominent websites and content length.
- Continuously assesses and measures system quality.

➢ Usability

- Prioritizes user-friendly websites (e.g., mobile-friendly, fast-loading pages, HTTPS).
- Avoidance of intrusive ads improves page performance.

➢ Context

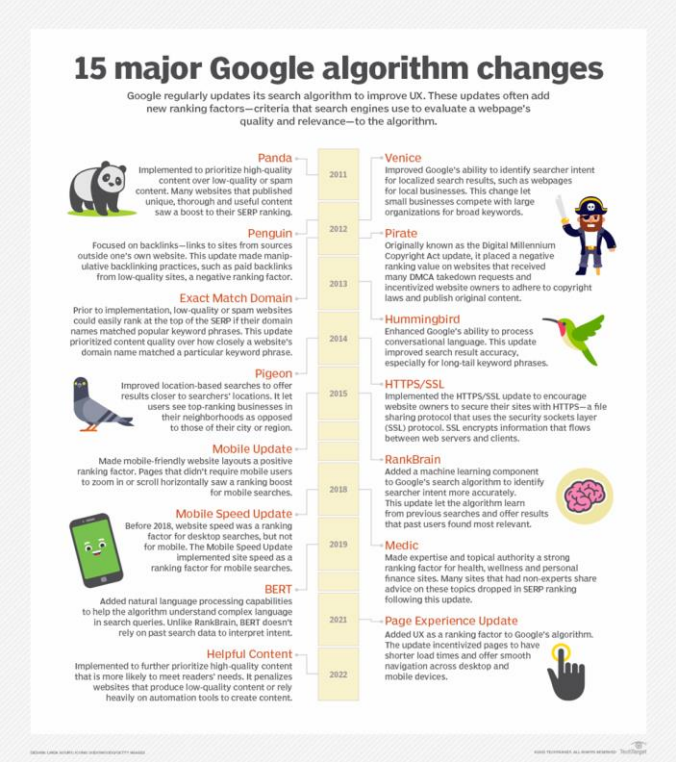
- Considers location, search history, and search settings for personalized results.
- Uses previous activity on the Google account for tailored results.

➢ Specific Ranking Factors

- More than 200 factors; the complete list and weights are unknown.
- Factors validate principles of meaning, relevance, quality, usability, and context.

➢ Measurable Factors for Content Creators

- **Content Organization:** Use subheads, headings, rich media, and bulleted lists.
- **Content Length:** Longer content generally performs better.
- **Website Structure:** Simple architecture helps with indexing.
- **Backlinks:** Links from other sites indicate content trustworthiness.
- **Domain Authority:** Achieved through high-quality, relevant content and backlinks.
- **Meta Descriptions:** Including keywords helps performance.
- **Image Alt Text:** Describes images for the algorithm.
- **Keywords in H2 and H3:** Use keyword variations in headings.
- **Click-Through Rate:** Measures the number of users clicking on the link.
- **Bounce Rate:** Measures visitors who leave immediately.
- **Dwell Time:** Measures how long visitors stay on a page.



Global Gender Gap Index

Context: *India slipped to 129th place on the World Economic Forum's Global Gender Gap index, while Iceland retained the top spot, according to the rankings published on June 12.*

General Trends

- **Global Gender Gap Score:** In 2024, the global gender gap stands at 68.5% closed, a slight improvement from 68.5% in the previous year.
- **Time to Parity:** At the current rate, it will take 134 years to achieve full gender parity, far beyond the 2030 Sustainable Development Goal target.
- **Top Performers:** Iceland leads with 93.5% of its gender gap closed, followed by Finland, Norway, and New Zealand. European countries dominate the top 10.
- **Key Dimensions:** Health and Survival gender gap is 96% closed, Educational Attainment 94.9%, Economic Participation and Opportunity 60.5%, and Political Empowerment 22.5%.
- **Political Empowerment:** Political Empowerment has seen the most significant improvement since 2006, gaining 8.3 percentage points to 22.8%.
- **Economic Participation:** The Economic Participation and Opportunity gap has shortened the timeline for parity by 17 years from 2023.
- **Educational Attainment:** Time to parity in Educational Attainment has increased by 4 years from 2023, now estimated at 20 years.
- **Regional Differences:** Europe leads with 75% of its gender gap closed. Northern America, Latin America and the Caribbean, and Eastern Asia and the Pacific follow.
- **Labour Market Representation:** Women's representation in the global workforce is 42%, with 31.7% in senior leadership roles.
- **Technology and STEM:** Women's representation in STEM roles remains low at 28.2%, but there is an increase in female AI talent.
- **Equitable Care Systems:** Progress in equitable care systems is crucial for improving women's workforce participation.

Trends in South Asia

- **Overall Parity Score:** South Asia ranks seventh globally, with a gender parity score of 63.7%, showing a modest improvement of 3.9 percentage points since 2006.
- **Economic Participation:** The region ranks last in Economic Participation and Opportunity, with a score of 38.8%, highlighting low labour-force participation and significant gender disparities in leadership roles.
- **Educational Attainment:** The Educational Attainment score is 94.5%, showing significant progress since 2006, but there remain substantial gender gaps in literacy and education, particularly in Pakistan and Nepal.
- **Health and Survival:** The Health and Survival score remains stable at 95.4%.
- **Political Empowerment:** Political Empowerment has declined slightly by 0.7 points from 2023 to 26%, reflecting persistent gender imbalances in ministerial and parliamentary representation.
- **Economic Opportunities:** Women's workforce participation in India is notably low, with large disparities in income and leadership positions.
- **Technological Engagement:** There is an emerging focus on increasing women's engagement in STEM and AI fields, though current participation remains low.
- **Policy and Social Change:** Efforts to address gender parity in India include increasing focus on policies supporting women's education, healthcare, and economic participation. However, cultural and structural barriers persist.

[Note: India specific findings will be dealt with in tomorrow's Daily prePARE.]

Nitrous Oxide (N_2O) Emissions

Context: *According to a new report by the Global Carbon Project, planet-warming nitrous oxide (N_2O) emissions increased by 40 percent between 1980 and 2020.*

Growth, Sources, and Major Emitters

- **Increase in Emissions:** Nitrous oxide (N_2O) emissions grew by 40% between 1980 and 2020.
- **Primary Sources:** 74% of the emissions in the past decade came from nitrogen fertilizers and animal manure used in agriculture.
- **Top 10 Countries:** China, India, the US, Brazil, Russia, Pakistan, Australia, Indonesia, Turkey, and Canada are the largest emitters.
- **India's Contribution:** India is the second largest emitter, responsible for 11% of global anthropogenic N_2O emissions in 2020, following China at 16%.

Impact and Concentration

- **Greenhouse Gas Ranking:** N_2O is the third most significant greenhouse gas, 273 times more potent than CO_2 over 100 years.
- **Temperature Rise:** Greenhouse gas increases have raised the Earth's average surface temperature by 1.15°C since the pre-industrial era, with anthropogenic N_2O contributing about 0.1°C.
- **Current Levels:** In 2022, N_2O concentration reached 336 parts per billion, 25% higher than pre-industrial levels.
- **Comparison with CO_2:** The concentration of CO_2 was 417 parts per million in 2022, significantly higher than N_2O.

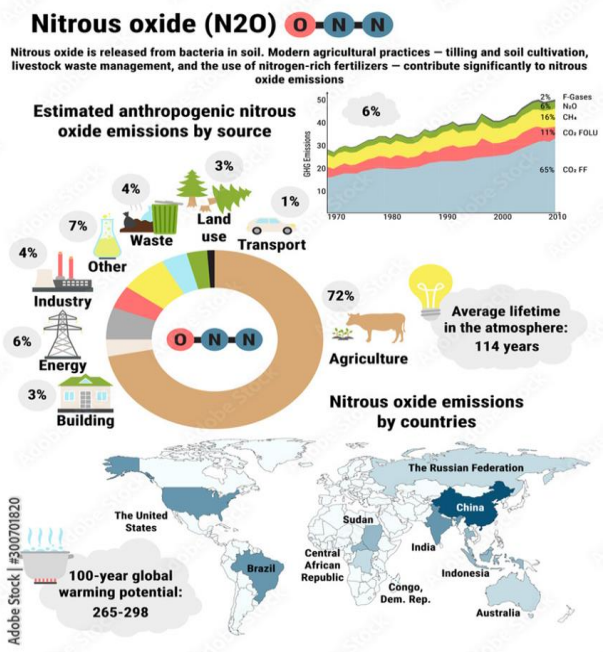
Agricultural Emissions and Environmental Impact

- **2020 Data:** Agricultural N_2O emissions were 8 million metric tonnes, a 67% increase from 1980.

- **Fertilizer Use:** Commercial nitrogen fertilizer use rose from 60 million metric tonnes in 1980 to 107 million metric tonnes in 2020. Animal manure contributed an additional 101 million metric tonnes.
- **Long-term Impact:** N_2O remains in the atmosphere for 117 years, causing long-term climate and ozone layer impacts.
- **Environmental Pollution:** Inefficient use of synthetic nitrogen fertilizers and animal manure pollutes groundwater, drinking water, and coastal waters.

➢ **Climate Goals and Recommendations**

- **Paris Agreement Targets:** To keep global temperature rise below 2°C, N_2O emissions from human activities must decrease by at least 20% from 2019 levels by 2050.
- **Urgency of Action:** Reducing N_2O emissions is crucial as no technologies currently exist to remove it from the atmosphere.
- **Broader Implications:** Increasing meat and dairy consumption has led to higher manure production and N_2O emissions. While agricultural emissions are growing, emissions from other sectors like fossil fuels and chemicals are stable or declining. Emissions from aquaculture are increasing, especially in China.



NEWS IN BETWEEN THE LINES

World Day Against Child Labour

World Day Against Child Labour was being observed yesterday on June 12, 2024.

About the World Day Against Child Labour:

- The World Day Against Child Labour is **observed every year** aimed at raising awareness and **mobilising efforts to end child labour** in all its forms.
- The **International Labour Organization** (ILO) established World Day Against Child Labour in **2002**.
- According to United Nations, about **sixteen crore children worldwide are victims of child labour**, which **deprives them** of their **right to an education** and threatens their well-being and future.
- The **theme** of World Day Against Child Labour 2024 is – **Let's act on our commitments: End Child Labour**.
- **Article 24** of the Constitution of India **prohibits the employment of children under 14 years old in factories**, **mines** or **hazardous occupations**.
- The international community has committed to achieving Sustainable Development Goal (SDG) **Target 8.7,** which aims to eliminate all forms of child labour by **2025**.
- **Africa has the highest** prevalence of **child labour at 20%,** affecting 72 million children, **followed by Asia** and the **Pacific at 7%,** totaling 62 million children, with the Americas, Europe and Central Asia, and the Arab States contributing 5%, 4%, and 3% respectively.
- Child labour is predominantly **found in low-income countries**, but the **highest** numbers of child labourers are **in middle-income countries**.

Lipulekh Pass

Recently, the Indian traders in Pithoragarh urged the government to reopen the Lipulekh pass trade route with China, closed since 2019 due to the Covid-19 pandemic.

About the Lipulekh Pass:

- Lipulekh Pass, also known as Lipu-Lekh Pass, Qiangla or Tri-Corner, is a high-altitude mountain pass in the western Himalayas of Uttarakhand, India.
- It is an international border crossing between **India**, **China**, and **Nepal** and serves as a tri-junction between **Uttarakhand**, **Tibet** and **Nepal**.
- The pass is 5,334 meters high and has been **used by traders**, **pilgrims** and **mendicants since ancient times to travel between India and Tibet**.
- It is also a route for pilgrims traveling to Kailas and Manasarovar.
- In **2019**, the trade route through the pass was suddenly closed due to the COVID-19 pandemic, forcing Indian traders to leave their products behind in the **Taklakot mart** in Tibet.

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Kala-azar

On June 12, 2024, the World Health Organization (WHO) launched a new framework to eliminate Kala-azar in Eastern Africa.

About the Kala-azar:

- Kala-azar, also **known as visceral leishmaniasis** or "black fever", is a **fatal disease** caused by the protozoan **parasite Leishmania donovani.**
- The word "kala-azar" comes from the Hindi word kala (black) and the Persian word azar (disease) and refers to the grayish or **blackish discoloration of the skin** that can occur during infection.
- It's transmitted through the bite of **infected female sandfly, Phlebotomus argentipes** and is characterized by irregular **fevers**, **weight loss**, enlarged spleen and **liver** and **anemia**.
- In **2022, Eastern Africa** accounted for **73%** of the global kala-azar cases, with 50% of these cases occurring in **children under 15 years of age.**
- Between **2004** and **2008**, **Bangladesh**, **India** and **Nepal** collectively accounted for 70% of the global kala-azar caseload.
- In October **2023**, **Bangladesh** was declared kala-azar -free, **making it the first country** to achieve this milestone.
- In India, the disease has been reported in **Bihar**, **Jharkhand**, **West Bengal** and **Uttar Pradesh**.

Place in News

Italy

Prime Minister Narendra Modi announced that he will embark on a visit to Apulia, Italy today to participate in the G7 Summit, which is scheduled to be held on the 14th of this month.

Italy (Capital: Rome)

Location: Italy is a **boot-shaped peninsula** located in southern **Europe**.

Boundaries:

- Italy shares its land borders with **France**, **Switzerland**, **Austria**, **Slovenia**, **Vatican City** and **San Marino.**
- It is surrounded by the **Mediterranean Sea**, including the **Adriatic Sea**, **Ionian Sea**, **Tyrrhenian Sea** and **Ligurian Sea**.

Physical Features:

- The highest point in Italy is **Monte Bianco**, also known as Mont Blanc in French, which is part of the Alps mountain range.
- The major rivers in Italy include the **Po, Tiber, Arno, Adige and Ticino.**
- **Mount Etna** is the highest and most active volcano in Europe, located on the east coast of Sicily.

POINTS TO PONDER

- According to the Global Gender Gap Index released by the World Economic Forum, which country retained its top position? **– Iceland (India-129th)**
- India is the world's second-largest source of which greenhouse gas, which heats up the atmosphere far more than carbon dioxide? **– Nitrous Oxide (N_2O)**
- Nobel laureate Muhammad Yunus and 13 others were recently indicted by a Bangladesh court. What were they accused of embezzling? **– Money from a workers' welfare fund**
- During excavations for an airport on Greece's largest island of Crete, what significant archaeological find dating back 4000 years was unearthed? **– A circular monument**
- Recently, which NASA spacecraft's camera captured images of a mysterious pit on the side of an ancient volcano on Mars? **– Mars Reconnaissance Orbiter (MRO)**