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## News Analysis (12 Dec, 2020)

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### India-Uzbekistan Virtual Summit

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#### Why in News

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In a recent virtual summit, **India and Uzbekistan** have deliberated on **expanding bilateral ties aiming to expand cooperation in a range of areas**, including new and renewable energy, digital technologies, cybersecurity and sharing of information.

The agreements also include cooperation on **connectivity projects in Afghanistan** and its **peace process, trilateral dialogue with Iran, combatting terrorism**, etc.



#### Key Points

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- **Trade, Economic and Investment Cooperation:**

- Making efforts to achieve the **mutually identified target of USD 1 billion for bilateral trade.**

The **current bilateral trade** level of about **USD 285 million** (2018) is far below the potential.

- Fast-track the conclusion of the ongoing **Joint Feasibility Study** that will pave the way for the commencement of negotiations on a **Preferential Trade Agreement.**
- Early conclusion of the **Bilateral Investment Treaty** which shall facilitate investment promotion and protection for further improvement of trade and economic cooperation.

The sides noted the prospects for greater opportunities in the free economic zones of the two countries, including in the **Uzbek-Indian free pharmaceutical zone** in the **Andijan region** (eastern part of the Fergana Valley in far eastern Uzbekistan).

- Uzbekistan welcomed the opportunities in India for investing/manufacturing under the **‘Make in India’** programme.

- **Development Cooperation:**

India confirmed the **approval of a USD 448 million Line of Credit for four developmental projects** in Uzbekistan in the areas of road construction, sewerage treatment and information technology.

- **Defence and Security:**

- Appreciated the enhanced pace of bilateral defence cooperation since the convening of the first meeting of **Joint Working Group on Defence Cooperation in February 2019.**
- Welcomed the holding of the **“Dustlik 2019”, first-ever joint military exercises in November 2019.**
- Agreed to further strengthen cooperation between the law enforcement agencies and special services of the two countries, including under the framework of the **Uzbekistan-India Joint Working Group on Counter-Terrorism.**

- **Civil Nuclear Energy:**

Welcomed the conclusion of the bilateral agreement between the **Global Centre for Nuclear Energy Partnership (GCNEP) India** and the **Agency for Development of Nuclear Energy, Uzbekistan.**

GCNEP is the **sixth research and development (R&D) unit** under the aegis of **Department of Atomic Energy (DAE)** and helps in capacity building, in association with the interested countries and the **International Atomic Energy Agency (IAEA).**

- **Connectivity:**
  - Reiterated continued commitment for **enhancing connectivity** between India and Uzbekistan and in the larger Central Asian region to bolster trade and investment.
  - India welcomed the **proposal to hold trilateral dialogue among India, Iran and Uzbekistan** to promote connectivity through the Chabahar port.
  - India also **requested Uzbekistan to consider joining** the **International North-South Transport Corridor** (INSTC) which would add to the overall improvement of connectivity in the larger Eurasian space.
- **Culture, Education and People-to-People Contacts:**

India invited Uzbekistan to avail of increased scholarship opportunities provided by the **Indian Council for Cultural Relations** (ICCR) and training and capacity building under the **Indian Technical and Economic Cooperation (ITEC) programme**.
- **Terrorism:**
  - Strongly **condemned terrorism** in all its forms and manifestations and reaffirmed the determination to combat this menace by destroying terrorist safe-havens, networks, infrastructure and funding channels.
  - Also underlined the need for every country to ensure that its territory is not used to launch terrorist attacks against other countries and called for early finalisation of a **Comprehensive Convention on International Terrorism** (CCIT).
- **Afghanistan:**

Called for the **settlement of the Afghan conflict** on the principle of Afghan-led, Afghan-owned and Afghan-controlled peace process and expressed unanimity in support for a united, sovereign and democratic Islamic Republic of Afghanistan.

- **Reformed Multilateralism:**

- Reaffirmed that the **United Nations** (UN) must play a central role in maintaining global peace and security and also called for **comprehensive reform of the UN structures** including the Security Council with expansion in both categories of membership.
- Uzbekistan **reaffirmed its support to India's candidature for permanent membership of the UN Security Council** and congratulated India on its **election as a non-permanent member** of the UN Security Council for the term **2021-22**.
- India also congratulated the **Uzbek side on its successful election** to the **UN Human Rights Council** for the term **2021-23**.
- Appreciated their close cooperation in the **Shanghai Cooperation Organization** (SCO).

In November 2020, India hosted the **first-ever meeting of the Council of the Heads of Government of SCO** since its joining the SCO.

- India appreciated Uzbekistan's support in the successful holding of the **2<sup>nd</sup> India-Central Asia Dialogue** at the level of Foreign Ministers with the participation of Afghanistan.
- **Uzbekistan is a member of the Organisation of Islamic Cooperation** (OIC), which is the second largest intergovernmental organization after the UN. **India is not a member** of the OIC. However, India was **invited as a guest of honour at the 46<sup>th</sup> Session of the Council of Foreign Minister in 2019**.

- **Covid-19 Pandemic:**

- Emphasized the need for bilateral and global cooperation to continue the **fight against the pandemic** including development and distribution of effective vaccines and other medicines.
- **Uzbekistan thanked India for the assistance rendered to Uzbekistan in its fight against the pandemic** and India reaffirmed its continued commitment.

## Way Forward

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- Agreements reached during various bilateral visits have strengthened cooperation between India and Uzbekistan in diverse sectors such as political, trade and investment, defence, security, counter-terrorism, science and technology, nuclear energy, space, information technology and have promoted cultural and academic linkages.

- Both countries thanked each other for the productive discussions held during the virtual summit and expressed confidence that the understandings and agreements will further deepen the strategic partnership between the two countries for the well-being of their peoples and mutual prosperity.

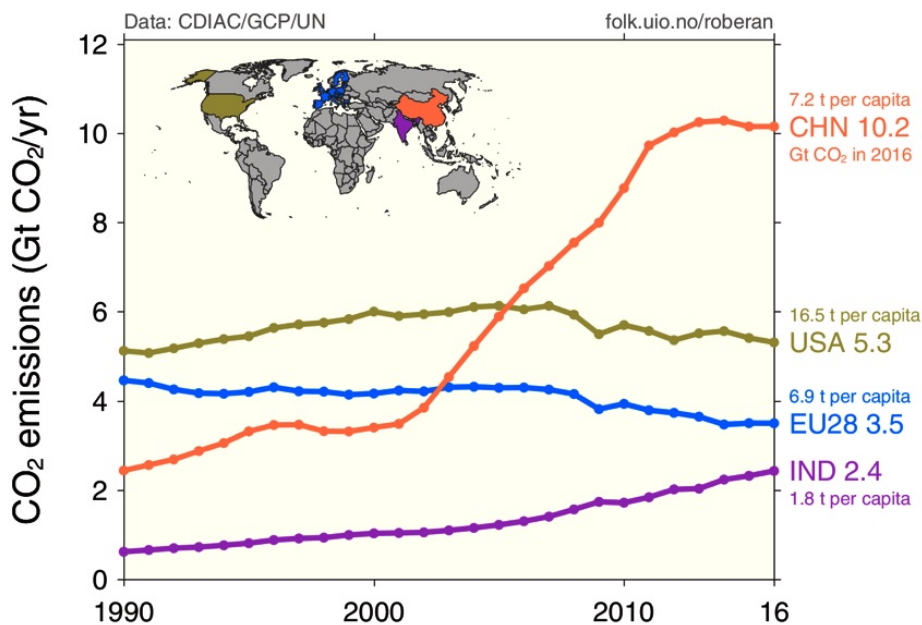
**Source: TH**

## Five Years of Paris Climate Accord

### Why in News

Recently, India has reiterated her commitment to the **Paris Climate Accord**, prior to the **Climate Ambition Summit** which will start from 12<sup>th</sup> December 2020 at Glasgow, Scotland.

The **Climate Ambition Summit 2020** will mark the **fifth anniversary** of the **Paris Agreement**, and will **provide a platform** for government and non-governmental leaders to **demonstrate their commitment** to the Paris Agreement and the multilateral process.



### Key Points

- **Climate Ambition Summit 2020:**
  - **Objective:** To set out new and ambitious commitments under the three pillars of the **Paris Agreement** that are **mitigation, adaptation and finance commitments**.
  - **Scope:** The Summit will provide a **meaningful platform** for businesses, cities and other non-state actors who are rallying together and collaborating to support governments and **accelerate the systemic change required to reduce emissions and build resilience**.
  - **Hosted By:** The **United Nations**, United Kingdom and France in partnership with Chile and Italy.
- **History of Emissions:**
  - As the most abundant **Greenhouse Gas (GHG)** in our atmosphere, **carbon dioxide (CO<sub>2</sub>)** has become a direct proxy for measuring climate change. Its levels have varied widely over the course of the Earth's 4.54 billion year history.
  - Historically it's the **developed countries that have been major contributors** to carbon emissions.
  - **Historical Emissions:**
    - The United States (US) has the highest historical emissions at **25%**, followed by the **European Union (EU)** at **22%** and China at **13%**.
    - India has a low carbon emission contribution of only **3%**.

## Paris Climate Accord

- **Legal status:** It is a **legally binding international treaty** on **climate change**.
- **Adoption:** It was adopted by **196 countries** at **Conference of the Parties COP 21** in Paris in **December 2015**.
- **Goal:** To limit global warming to **well below 2° Celsius, and preferably limit it to 1.5° Celsius**, compared to pre-industrial levels.
- **Objective:** To achieve the **long-term temperature goal**, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate-neutral world by mid-century.
- **Current Status of Global Emissions:**
  - **Five years after the Paris agreement**, all states have submitted their national contributions to mitigate and adapt to **climate change**.
  - The contributions are **radically insufficient** to reach the well **below 2 degrees Celsius limit and are even further from the 1.5 degrees Celsius** temperature limit identified in the Paris Agreement.
  - Besides **India**, only Bhutan, the Philippines, Costa Rica, Ethiopia, Morocco and Gambia were complying with the accord.
  - **China** has the **highest GHG emissions (30%)** while the **US** contributes **13.5%** and the **EU 8.7%**.

- **India's Current Emissions:**

- A **United Nations report** released earlier this year stated that India's per capita emissions are actually **60% lower than the global average**.
- The emissions in the country **grew 1.4% in 2019**, much lower than its **average of 3.3% per year over the last decade**.
- **Some of the Measures taken by India to Control Emissions:**
  - **Bharat Stage (BS) VI norms:** These are emission control standards put in place by the government to keep a **check on air pollution**.
  - **National Solar Mission:** It is a major initiative of the Government of India and State Governments to **promote ecologically sustainable growth** while addressing India's energy security challenge.
  - **National Wind-Solar Hybrid Policy 2018:** The main objective of the policy is to provide a framework for promotion of large grid connected **wind-solar photovoltaic (PV) hybrid systems for optimal and efficient utilization of wind and solar resources**, transmission infrastructure and land.
  - All these and many other initiatives helped India in cutting **CO<sub>2</sub> emissions by 164 million kg**.

- **Issues in Achieving the Pledged Targets:**

- Most of the Nations have been slow to update their **national contributions for reducing emissions for 2025-2030**, however several have announced **net zero emission targets** in the recent past.

**Net zero emission** means that all man- made greenhouse gas emissions must be removed from the atmosphere through reduction measures, thus reducing the Earth's net climate balance.

- The net zero targets are **subject to credibility, accountability and fairness checks.**

- **Credibility:** The plans and policies of nations is not credible enough to meet the long term **net zero targets** as :

The **Intergovernmental Panel on Climate Change (IPCC) 1.5 degrees Celsius Report** indicated that to stay within a reasonable chance of achieving 1.5 degrees Celsius, global **CO<sub>2</sub> emissions have to fall by 45% from the 2010 levels by 2030** but **current national contributions are not on track for such a fall.**

- **Accountability:** There is **limited or no accountability** for the long-term net zero goals and short-term national contributions as:

- Many **net zero goals have not yet been embedded in national contributions and long-term strategies** under the Paris Agreement.

- In any case, **accountability under the Paris Agreement is limited.** States are not obliged to achieve their self-selected targets. There is **no mechanism to review the adequacy** of individual contributions. **States are only asked to provide justifications** for the fairness and ambition of their targets.

- The **transparency framework does not contain a robust review function**, and the compliance committee is facilitative and limited to ensuring compliance with a short list of binding procedural obligations..

- **Fairness:** Issues of fairness and justice, **both between and within generations**, are **unavoidable:**

There is **no mechanism** to check that whether the net zero targets, and pathways to net zero are fair or how much are states doing in comparison to others and relative to how much they should.

## Way Forward

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- To achieve this long-term temperature goal, **countries should aim to reach global peaking of greenhouse gas emissions as soon as possible** to achieve a climate-neutral world by mid-century.



- **Net zero pledges need to be credible, accountable and fair** to get us to a stable climate. Not all states will be in a position to pledge net zero targets, nor should they be expected to. All states, including India, can, however, **pledge actions that are credible, accountable and fair.**
- Credible **short-term commitments, with a clear pathway to medium-term decarbonisation**, that take into account the multiple challenges states face, such as on air pollution, and development, might well be the more defensible choice for some.

**Source:IE**

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## **Extreme Climate Events: CEEW**

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### **Why in News**

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According to a recent study on the report “**Preparing India for Extreme Climate Events**” released by the **Council on Energy, Environment and Water (CEEW)**, **over 75% of districts in India are hotspots of extreme climate events** such as **cyclones, floods, droughts, heat waves and cold waves.**

- This is the **first time** that extreme weather event hotspots in the country have been mapped.  
**CEEW** is an independent, non-partisan, one of Asia’s leading not-for-profit policy research institutions, devoted to research on all matters affecting the use, reuse, and misuse of resources.
- The report comes just after the **United Nations Environment Programme (UNEP) Emissions Gap Report 2020** which warned that the world is heading for a temperature **rise of over 3 degrees Celsius** this century.

### **Key Points**

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- **Major Findings:**

- The **frequency, intensity, and unpredictability** of extreme events have risen in recent decades.
  - While India witnessed 250 extreme climate events in 35 years between 1970 and 2005, it recorded 310 such weather events in only 15 years since then.
  - With an unusual spike in extreme events since 2005, these districts are bearing the **effects of changing microclimate with loss of property, livelihoods and lives.**
- The **pattern reflects the global changes:**
  - Extreme weather events resulting from climate change led to **4,95,000 human deaths across the world in 1999-2018.**
  - More than 12,000 extreme weather events led to **losses worth USD 3.54 trillion** (measured in terms of **purchasing power parity** or PPP) during this period.
- The **current trend** of catastrophic climate events **results from a mere 0.6 degrees Celsius temperature rise in the last 100 years.**

India is **already the 5<sup>th</sup> most vulnerable country globally** in terms of extreme climate events, and it is all set to become the world's flood capital.

- **Cyclones:**

- **After 2005**, the yearly average number of **districts affected by cyclones tripled** and the **cyclone frequency-doubled.**
- In the past decade, 258 districts were affected by cyclones with hotspot districts **all along the eastern coastline.**
- The east coast's warming regional microclimate, **land-use change**, and **degrading forests** are triggering the region's cyclonic activity.

- **Flood Events:**

- The decade **2000-2009 showed a spike in extreme flood events and in associated flood events**, which affected almost 473 districts.

Events associated with floods such as **landslides, heavy rainfall, hailstorms, thunderstorms, and cloudbursts** increased by over 20 times.

- The compounding effects of **land subsidence**, the **urban heat island phenomenon**, and **sea-level rise due to glacial melts** are leading to the **intensification of cyclonic disturbances**, thus increasing the number of flood events experienced during the decade and making it an outlier.
- While the **number of rainy days during monsoon has decreased, single-day extreme rainfall events are increasing**, leading to flooding.
- **Six of India's eight most flood-prone districts** in the last decade, Barpeta, Darrang, Dhemaji, Goalpara, Golaghat and Sivasagar, are **located in Assam**.

- **Droughts:**

- The **yearly average of drought-affected districts increased 13 times after 2005**.

Until 2005, the number of districts affected by drought was six, but **after 2005 this figure rose to 79**.

- While the **intensity of damage in terms of loss of life has reduced significantly**, droughts **increase uncertainties related to agriculture and rural livelihoods**.
- **Drought-affected district hotspots of India in the last decade** were Ahmednagar, Aurangabad (both Maharashtra), Anantapur, Chittoor (both Andhra Pradesh), Bagalkot, Bijapur, Chikkaballapur, Gulbarga, and Hassan (all Karnataka).

- **Weakening of Monsoon:**

The empirical evidence generated from the analysis coincides with the **weakening of monsoons due to rising micro-temperatures**.

This further can be validated by the fact that states like Maharashtra, Karnataka, and Uttar Pradesh saw severe **water scarcity during 2015 due to record-breaking temperatures during summer and weakening monsoons**.

- **Swapping of Nature of Extreme Events:**
  - The study also found a **shift in the pattern of extreme climate events**, such as **flood-prone areas becoming drought-prone and vice-versa**, in over 40% of Indian districts.
  - This swapping has **happened in two ways**.
    - In some cases, districts which were **flood-prone have now become drought-prone and vice versa**.
    - While **many districts are facing floods and droughts simultaneously**. This trend is both **unusual and alarming**, and **requires further investigation**.
  - **Coastal southern Indian states** are increasingly **witnessing more droughts**.
  - Further, **floods and droughts coincide during the same season** in several districts of Bihar, Uttar Pradesh, Odisha, and Tamil Nadu.
- **Suggestions:**
  - **Develop a Climate Risk Atlas** to map critical vulnerabilities such as coasts, urban heat stress, water stress, and biodiversity collapse.
  - **Develop an Integrated Emergency Surveillance System** to facilitate a systematic and sustained response to emergencies.
  - **Mainstream risk assessment at all levels**, including localised, regional, sectoral, cross-sectoral, macro and micro-climatic level.
  - **Enhance adaptive and resilience capacity** to climate-proof lives, livelihoods and investments.
  - **Increase the participatory engagement of all stakeholders** in the risk assessment process.
  - **Integrate risk assessment** into local, sub-national, and national level plans.

### Microclimatic zones shifting

- Microclimatic zones, or **areas where the weather is different from surrounding areas**, are **shifting across** various districts of India.
- A shift in microclimate zones may **lead to severe disruptions across sectors**.  
Every 2 degrees Celsius rise in annual mean temperature will reduce agricultural productivity by 15-20%.
- Some reasons **identified behind this shift** in microclimatic zones is **change in land-use patterns, deforestation, encroachments upon mangroves, disappearing wetlands and natural ecosystems by encroachment, and urban heat islands that trap heat locally**.

**Source: IE**

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## Why in News

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Recently a **not very common type** of malaria, *Plasmodium ovale*, has been identified in a jawan in Kerala.

The soldier is believed to have contracted it in **Sudan**, where Plasmodium ovale is endemic.

## Key Points

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- **About:**

- Plasmodium ovale is **one among the five kinds** of malarial parasites — Plasmodium falciparum, Plasmodium vivax (the commonest ones), Plasmodium Malariae, Plasmodium Ovale and Plasmodium Knowlesi.
- It is termed ovale as about **20% of the parasitised cells are oval in shape.**
- The parasite can remain in the spleen or liver of the body for a long time, even years, after the mosquito bite, and the person could become symptomatic later.

- **Symptoms:**

Symptoms include fever for 48 hours, headache and nausea, and it rarely causes severe illness.

- **Similar to P vivax:**

- P ovale is very similar to P vivax and the treatment modality is the same as it is for a person infected with P vivax.
- Distinguishing between P vivax and P ovale may be tricky and can be differentiated only through careful detection.

- **Prevalence:**

- P ovale malaria is **endemic to tropical Western Africa.** It is relatively unusual outside of Africa and, where found, comprises less than 1% of the isolates.
- It has also been detected in the Philippines, Indonesia and Papua New Guinea, but is still relatively rare in these areas.

- **Transmission in India:**

- According to the **National Institute of Malaria Research (NIMR)**, the Kerala case could be an isolated one and there are no recorded cases of local transmission so far.
- Previously, too, isolated cases were reported in Gujarat, Kolkata, Odisha and Delhi. However, **no local transmission has been recorded** — which means these cases have been acquired.
- In India, out of 1.57 lakh malaria cases in the **high-burden states of Odisha, Chhattisgarh, Jharkhand, Meghalaya and Madhya Pradesh** in 2019, 1.1 lakh cases (70%) were cases of **falciparum malaria**.
- According to the recent **World Malaria Report 2020**, cases in India dropped from about 20 million in 2000 to about 5.6 million in 2019.

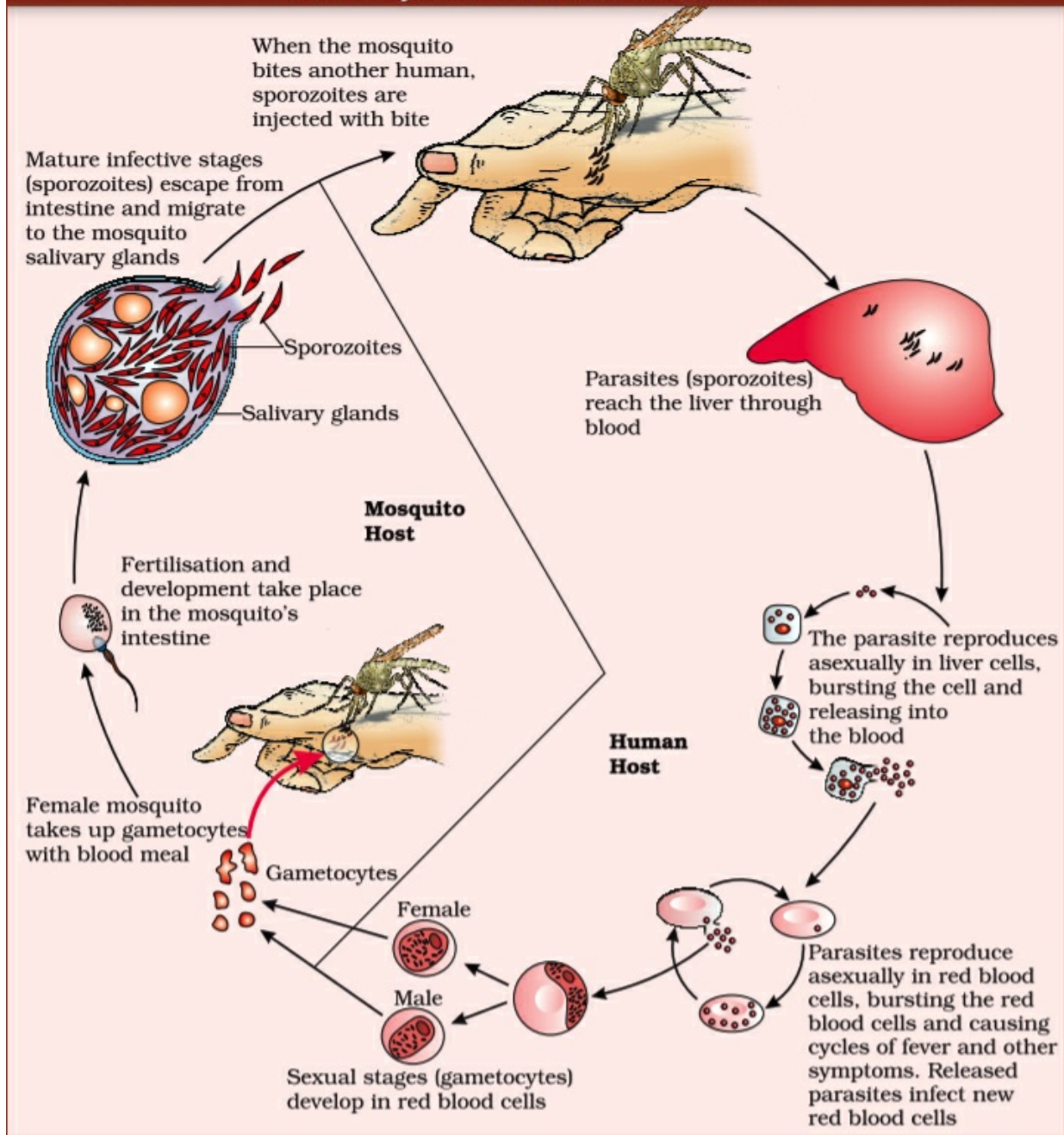
## Malaria

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- Malaria is caused by **Plasmodium (a protozoan)**.
- Malaria caused by **Plasmodium falciparum** is the **most serious** one and can even be **fatal**.
- **Life Cycle of Plasmodium:**
  - Plasmodium enters the human body as **sporozoites (infectious form)** through the bite of infected **female Anopheles mosquito**.
  - The parasites initially multiply within the liver cells and then attack the **Red Blood Cells (RBCs)** resulting in their rupture.

The rupture of RBCs is associated with release of a **toxic substance, haemozoin**, which is responsible for the chill and high fever recurring every three to four days.
  - When a female Anopheles mosquito bites an infected person, these parasites enter the mosquito's body and undergo further development.
  - The parasites multiply within them to form sporozoites that are stored in their salivary glands. When these mosquitoes bite a human, the sporozoites are introduced into his/ her body, thereby initiating the events mentioned above.

# Life Cycle of Plasmodium



## Note

- It is interesting to note that the malarial parasite **requires two hosts – human and mosquitoes** – to complete its life cycle.
- The **female Anopheles mosquito** is the **vector (transmitting agent)** too.
- **World Malaria Day** is observed on **25<sup>th</sup> April**.

It can be noted that the **World Health Organisation (WHO)** officially endorses disease-specific global awareness days for only four diseases viz. **HIV-AIDS, TB, Malaria, and Hepatitis**.

## **Suggestions for Delimitation Exercise**

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### **Why in News**

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**Pranab Mukherjee Foundation (PMF)**, a **non governmental institution**, has made suggestions for the next delimitation exercise.

**Delimitation** literally means the **act or process of fixing limits or boundaries of territorial constituencies** in a country to represent changes in population.

### **Key Points**

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- **Suggestions:** The next delimitation exercise should be a **two step process:**
  - A **Delimitation Commission** should be set up to **draw the boundaries as per the 2031 Census** and recommend the reorganisation of States based on population.
  - A **State Reorganisation Act** should be brought to give effect to the Delimitation Commissions' recommendations **“by splitting States into smaller ones”**.
- **Current Scenario:**
  - The **84<sup>th</sup> Amendment to the Constitution in 2002** had **put a freeze** on the delimitation of **Lok Sabha and State Assembly** constituencies till the **first Census after 2026**.
  - The current boundaries were drawn on the **basis of the 2001 Census**, the **number of Lok Sabha seats** and State Assembly seats **remained frozen on the basis of the 1971 Census**.
  - The population according to the **last census preceding the freeze** was **50 crore, which in 50 years has grown to 130 crore**, causing a **massive asymmetry in the political representation** in the country.

### **Delimitation Commission**

- The Delimitation Commission is appointed by the **President of India** and works in collaboration with the **Election Commission of India**.
- **Composition:**
  - Retired Supreme Court judge
  - Chief Election Commissioner
  - Respective State Election Commissioners



- **Functions:**
    - To determine the **number and boundaries of constituencies** to make the population of all constituencies nearly equal.
    - To identify seats **reserved for Scheduled Castes and Scheduled Tribes**, wherever their population is relatively large.
  - Delimitation Commissions have been **set up four times** — 1952, 1963, 1973 and 2002 under the Acts of 1952, 1962, 1972 and 2002.
  - The Delimitation Commission in India is a high power body whose orders have the **force of law** and cannot be **called in question before any court**.
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## Indus Valley Diet

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### Why in News

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As per a study published in the **Journal of Archaeological Science**, the diet of the people of **Indus Valley civilization** had a **dominance of meat**, including extensive eating of beef.

### Key Points

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- The study, “**Lipid residues in pottery from Indus Civilisation in northwest India**”, looks at the food habits of the people on the basis of **lipid residue analysis found in pottery** from sites such as:
  - Alamgirpur (Meerut), Uttar Pradesh
  - Haryana:
    - Masudpur, LohariRagho, Rakhigarhi city (Hisar)
    - Khanak (Bhiwani), Farmana town(Rohtak)

- **Findings:**

- The study finds the dominance of animal products such as meat of **pigs, cattle, buffalo, sheep and goat, as well as dairy products**, from rural and urban settlements of Indus Valley civilisation.
- Out of Domestic Animals, **cattle/buffalo** are the most abundant, averaging between **50-60% of the animal bones found**, with **sheep/goat** accounting for **10%** animal remains.

The High Proportions of cattle bones may suggest a **cultural preference for beef consumption** across Indus populations, supplemented by consumption of mutton/lamb.

- At Harappa, **90% of the cattle were kept alive** until they were **three or three-and-a-half years**, suggesting that **females** were used for **dairy production, whereas males were used for traction**.
- Previously there have been many studies on the food habit in Indus Valley civilisation before, primarily focusing on **crops**.

## Indus Valley Civilization

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- **Time Period:**

The Indus Valley Civilization was established **around 3300 BC**. It flourished between **2600 BC and 1900 BC**. It started declining around **1900 BC** and disappeared around **1400 BC**.

- This is also called **Harappan Civilization** after the first city to be excavated, **Harappa (Punjab, Pakistan)**.

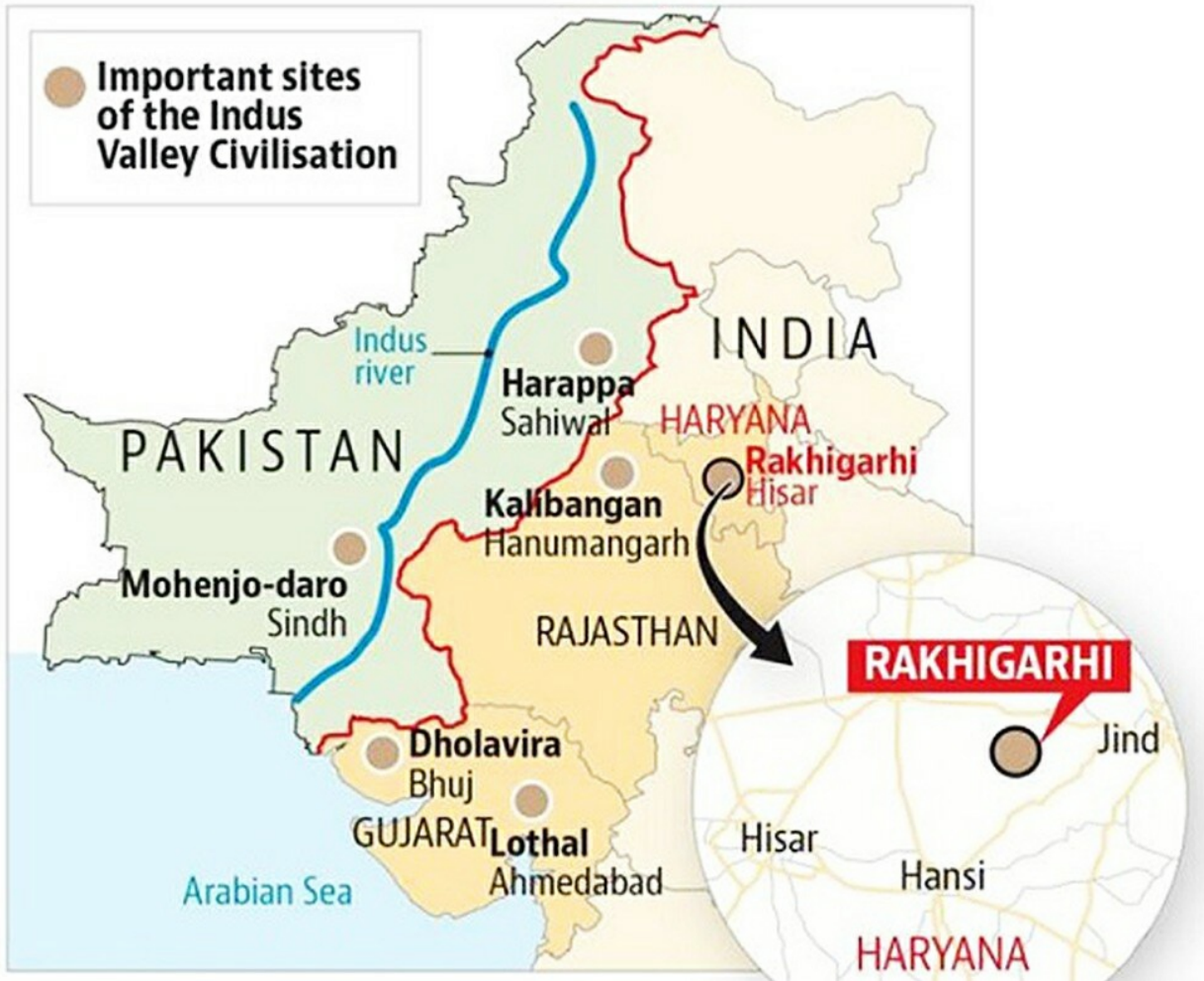
- **Geographical Extent:**

Geographically, this civilization covered **Punjab, Sindh, Baluchistan, Rajasthan, Gujarat and Western Uttar Pradesh**.

It extended from **Sutkagengor** (in Baluchistan) in the West to **Alamgirpur** (Western UP) in the East; and from **Mandu** (Jammu) in the North to **Daimabad** (Ahmednagar, Maharashtra) in the South. Some Indus Valley sites have also been found in as far away as Afghanistan.

- **Important Sites:**

- **Kalibangan** (Rajasthan), **Lothal, Dholavira, Rangpur, Surkotda** (Gujarat), **Banawali** (Haryana), Ropar (Punjab).
- **In Pakistan: Harappa** (on river Ravi), **Mohenjodaro** (on Indus River in Sindh), **Chanhudaro** (in Sindh).



### **Some Important Features:**

- The Indus Valley cities show a level of sophistication and advancement **not seen in other contemporary civilizations.**
- **Urban Features:**
  - Most cities had **similar patterns.** There were two parts: **a citadel and the lower town** showing presence of hierarchy in society.
  - Most cities had a **Great Bath.**
  - There were also **granaries, 2-storied houses made of burnt bricks, closed drainage lines, excellent stormwater, and wastewater management system, weights for measurements, toys, pots, etc.**
  - A large number of **seals** have been discovered.
- **Agriculture:**
  - The first civilization to **cultivate cotton.**
  - Animals were domesticated like **sheep, goats, and pigs.**
  - Crops were **wheat, barley, cotton, ragi, dates, and peas.**
- **Trade** was conducted with the **Sumerians** (Mesopotamia).
- **Metal Products :**
  - These were produced including those with **copper, bronze, tin, and lead. Gold and silver** were also known.
  - **Iron** was not known to them.
- **Religious Beliefs:**
  - **No structures** like temples or palaces have been found.
  - The people worshipped **male and female deities.**
  - A seal which was named '**Pashupati Seal**' has been excavated and it shows an image of a **three-eyed figure.**
- **Pottery:**
  - Excellent pieces of **red pottery designed in black** have been excavated.
  - Faience was used to make **beads, bangles, earrings, and vessels.**
- **Art Forms:**
  - A statuette named '**Dancing Girl**' has been found from **Mohenjodaro** and is believed to be 4000 years old.
  - A figure of a **bearded Priest-King** has also been found from **Mohenjodaro.**
- Lothal was a **dockyard.**
- Disposal of the dead was by **burial in wooden coffins.**
- The Indus Valley script has **not yet been deciphered.**

**Source:IE**

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## Why in News

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Recently, the Prime Minister has addressed the **International Bharati Festival 2020**, virtually **organised by the Vanavil Cultural Centre** (Tamil Nadu).

- The event celebrates the **138<sup>th</sup> birth anniversary** (11<sup>th</sup> December 2020) of Tamil poet and writer **Mahakavi Subramanya Bharati**.
- Scholar Shri **Seeni Viswanathan** received the **Bharathi Award for this year**.

### Key Points



- **Subramanya Bharati:**

- **Birth:** 11<sup>th</sup> December 1882, in Ettayapuram, Madras Presidency.
- **Brief Profile:** An outstanding **Indian writer of the nationalist period** (1885-1920) who is regarded as the **father of the modern Tamil style**.
  - He is **also known as ‘Mahakavi Bharathiyar’**.
  - His **strong sense of social justice** drove him to fight for self-determination.
- **Involvement during Nationalist Period:**
  - After 1904, he **joined the Tamil daily newspaper Swadesamitran**. This exposure to political affairs led to his **involvement in the extremist wing of the Indian National Congress (INC) party**.
  - In order to proclaim its revolutionary ardour, Bharathi had the **weekly newspaper named ‘India’** printed in red paper.
    - It was the **first paper in Tamil Nadu to publish political cartoons**.
    - He also **published and edited a few other journals like “Vijaya”**.
  - He **attended the annual sessions of INC** and discussed national issues with extremist leaders like Bipin Chandra Pal, **B.G. Tilak** and V.V.S. Iyer.

His participation and activities in **Benaras Session (1905)** and **Surat Session (1907)** of the INC impressed many national leaders for his patriotic fervour.
  - He published the sensational **“Sudesa Geethangal”** in 1908.
  - Bharati’s reaction to the **Russian Revolutions of 1917**, in a **poem entitled “Pudiyia Russia” (“The New Russia”)**, offers a fascinating example of the poet’s political philosophy.
  - He was **forced to flee to Pondicherry** (now Puducherry), a French colony, where he **lived in exile from 1910 to 1919**.
  - During this time, **Bharati’s nationalistic poems and essays were popular successes**.
- **Important Works:** Bharati’s best-known works include Kaṇṇan pāṭṭu (1917; Songs to Krishna), Panchali sapatham (1912; Panchali’s Vow), Kuyil pāṭṭu (1912; Kuyil’s Song), Pudiyia Russia and Gnanaratham (Chariot of Wisdom).

Many of his English works were collected in Agni and Other Poems and Translations and Essays and Other Prose Fragments (1937).
- **Death:** 11<sup>th</sup> September 1921.

- **Significance in Present Times:**

- The poet's definition of progress **had a central role for women**. He wrote women should walk with their head held high, looking people in the eye.  
The government is inspired by this vision and is working to ensure women-led empowerment.
- He believed in a **healthy mix between the ancient and the modern**, indicating a need **to develop a scientific temper**, a spirit of inquiry and march towards progress.

- **Bharathi Award:**

- The Bharati Award was **instituted in 1994 by Vanavil Cultural Centre**.
- **Every year**, it is being conferred on eminent persons who have **done laudable service in any field of social relevance** and thus worked towards the fulfilment of Bharati's dreams.

**Source: PIB**

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## **Ramanujan Prize for Young Mathematicians 2020**

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### **Why in News**

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The **Ramanujan Prize for Young Mathematicians 2020** has been awarded to **Dr. Carolina Araujo**, Mathematician from the Institute for Pure and Applied Mathematics (IMPA), Rio de Janeiro, **Brazil**.

She received the Prize for her **outstanding work in algebraic geometry**. Her work area focuses on **birational geometry**, which aims to classify and describe the structure of algebraic varieties.

### **Key Points**

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- The Ramanujan Prize for **Young Mathematicians from developing countries** has been awarded annually since **2005**.

- It was **originally instituted** by the International Centre for Theoretical Physics (ICTP), the Niels Henrik Abel Memorial Fund, and the International Mathematical Union (IMU).
  - The **participation of the Abel Fund ended in 2012**.
  - **ICTP**: Founded in 1964 by the late Nobel Laureate Abdus Salam, it seeks to accomplish its mandate by providing scientists from developing countries with the continuing education and skills that they need to enjoy long and productive careers.
  - **IMU**: It is **an international non-governmental and non-profit scientific organization**, with the purpose of promoting international cooperation in mathematics.
    - It is a **member of the International Science Council (ISC)**.
      - The ISC was **created in 2018** and is an **international non-governmental organization** bringing together the natural and social sciences and the largest global science organization of its type.
      - It has its office in **Paris, France**.
    - **India is a member country**.
    - IMU Secretariat is located in **Berlin, Germany**.
- The **Department of Science and Technology of the Government of India (DST) has agreed to fund the Prize**, starting with the 2014 Prize.
  - It has been supported by DST **in the memory of Srinivasa Ramanujan**, a genius in pure mathematics who was essentially self-taught and made spectacular contributions to elliptic functions, continued fractions, infinite series, and analytical theory of numbers.
  - In India, **22<sup>nd</sup> December** is celebrated as **National Mathematics Day** in the memory of Srinivasa Ramanujan.
- It is **awarded to a researcher from a developing country who is less than 45 years of age on 31<sup>st</sup> December** of the year of the award, and who has **conducted outstanding research in a developing country**.
  - Researchers **working in any branch** of the mathematical sciences **are eligible**.
  - The Prize carries a **USD 15,000 cash award**.

**Source: PIB**

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