



PadhAI



# Down to *Earth*



SUMMARY FOR UPSC ————— MAGAZINE

1-15TH JUNE 2026

Welcome to PadhAI—

# Down to Earth Magazine Coverage

You're here because you understand a core truth of UPSC preparation—success doesn't come from reading everything, but from reading what actually matters.

Down to Earth is one of the most valuable sources for environment, ecology, and sustainable development. However, reading it cover to cover can be time-consuming and often difficult to align directly with exam demands. PadhAI's Down to Earth coverage is designed to simplify that process—by filtering, structuring, and converting important content into exam-ready insights.

## Why PadhAI's Down to Earth Coverage

Many aspirants struggle with Down to Earth because of:

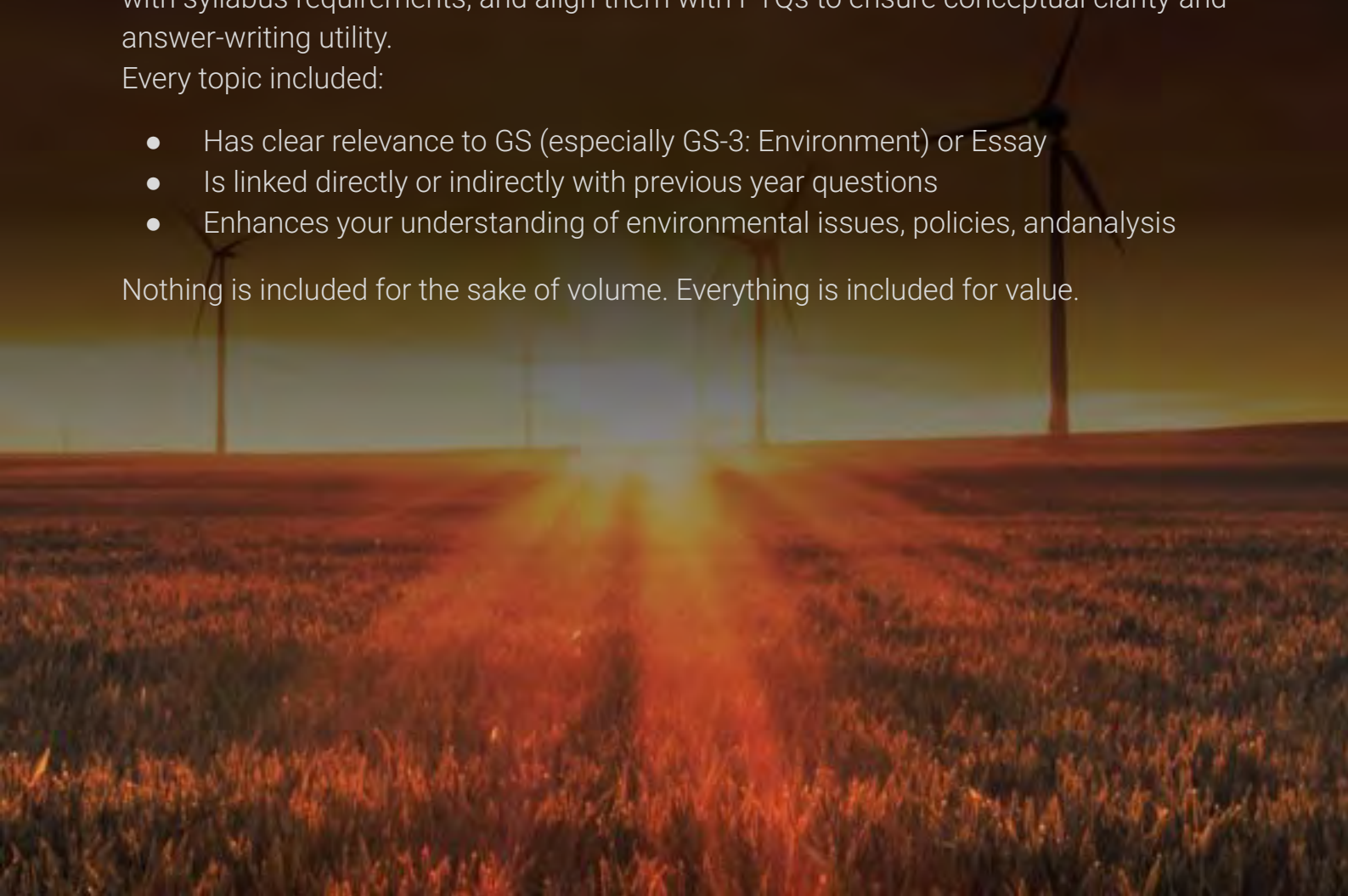
- Detailed and lengthy articles
- Indirect linkage with Prelims and Mains
- Difficulty in extracting core concepts and usable points

At PadhAI, we focus only on what is relevant. We identify key themes, connect them with syllabus requirements, and align them with PYQs to ensure conceptual clarity and answer-writing utility.

Every topic included:

- Has clear relevance to GS (especially GS-3: Environment) or Essay
- Is linked directly or indirectly with previous year questions
- Enhances your understanding of environmental issues, policies, and analysis

Nothing is included for the sake of volume. Everything is included for value.



## Part of the PadhAI Preparation Ecosystem

This Down to Earth coverage is integrated with a broader system that includes:

- Fast and concise magazines (published early)
- Daily PIB summaries (filtered and exam-focused)
- Monthly compliance coverage
- Complete Prelims & Mains PYQs with structured answers
- News summaries from relevant sources
- Personal tutor chat support for continuous guidance

The goal is simple: One reliable system instead of multiple scattered sources.

## Our Guiding Philosophy

At PadhAI, everything is built on three principles:

- Learn only what matters
- Learn it the right way
- Learn it at the right time

That's how preparation becomes focused, efficient, and effective.



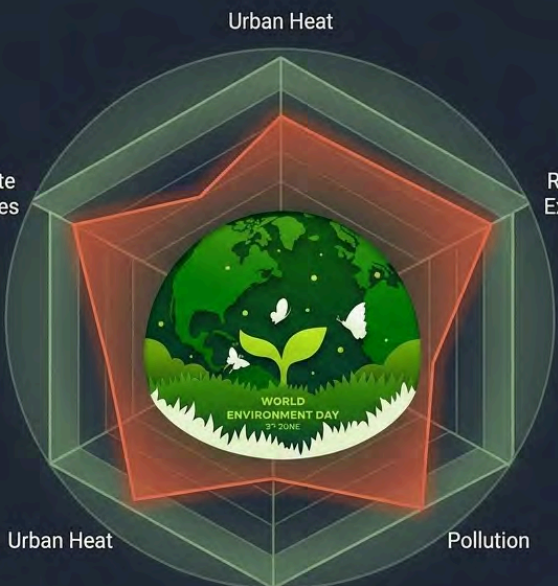
## Topic 1: World Environment Day 2026: Towards a New Environmentalism

### World Environment Day 2026: The Sustainability Mandate

**Strategic Objectives**

- Shift the binary debate from 'Environment vs. Development' to inclusive, sustainable growth.
- Address the Urban Heat Island effect exacerbated by concretisation and shrinking wetlands.
- Ensure a 'Just Green Transition'—preventing the exploitation of vulnerable communities during critical mineral extraction.
- Accelerate green innovation and climate-resilient agriculture to secure future food and water security.

**5 June** (Observed since 1973)  
**5 Core SDGs Targeted:** 6 (Water), 7 (Energy), 11 (Cities), 13 (Climate), 15 (Land)



NotebookLM

**Summary:** World Environment Day 2026 serves as a critical junction for global leaders to pivot from the "Environment versus Development" binary toward a model of "Sustainable Development." The source emphasizes that recurring heatwaves and climate disasters have made environmental sustainability an urgent necessity rather than an optional policy choice.

**Background:** Established by the UN General Assembly during the 1972 Stockholm Conference and celebrated since 1973, World Environment Day is the world's largest platform for environmental action. Current observations by UNEP highlight that global temperatures are nearing record levels, exacerbating urban heat stress.

**Key Points:**

- **Core Environmental Issues:** Rising greenhouse gas emissions are driving frequent heatwaves, floods, and droughts, which severely impact India through reduced agricultural productivity and water scarcity.



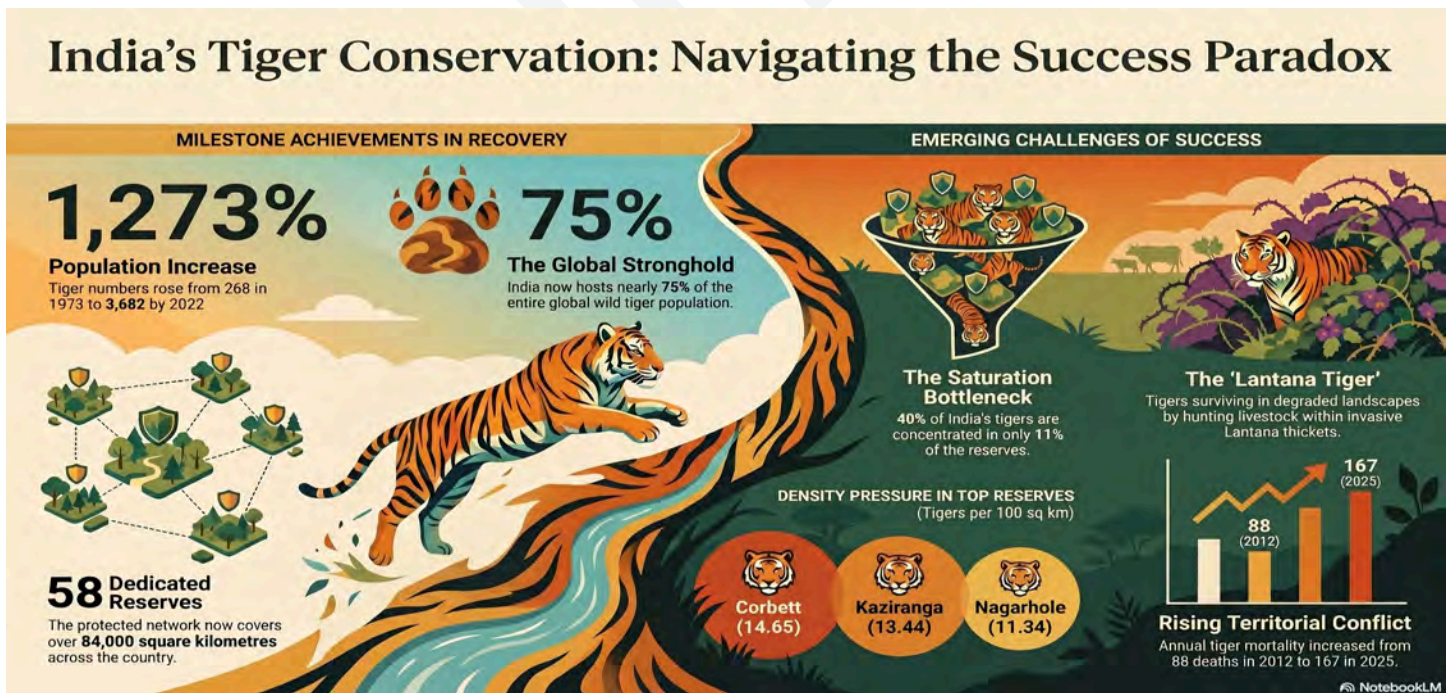
- **Unsustainable Urbanisation:** Excessive use of concrete, loss of green cover, and poor building design have created "Urban Heat Islands," increasing energy demands and deteriorating public health.
- **Resource Governance and Innovation:** Future challenges include managing a "Just Green Transition" that avoids exploiting vulnerable communities while meeting the energy demands of emerging technologies like Artificial Intelligence.

**Prelims Facts (One Liners):**

- **Stockholm Conference (1972):** The historical origin of World Environment Day.
- **LiFE (Lifestyle for Environment):** India's initiative promoting sustainable consumption and behavioural change.

**MCQ Practice:** Q. Which of the following is the coordinating body for World Environment Day? A) UNESCO B) UNEP C) FAO D) UNDP Answer: B (The sources state that World Environment Day is coordinated annually by the United Nations Environment Programme (UNEP)).

**Topic 2: India's Tiger Conservation: From Population Recovery to Landscape Management**



**Summary:** While India has achieved a remarkable recovery in tiger populations, the success has brought new challenges like habitat saturation and human-wildlife conflict. Conservation focus must now shift from merely increasing numbers in specific reserves to managing tigers across broader, connected landscapes.

**Background:** Project Tiger was launched in 1973 with only nine reserves and 268 tigers. As of 2022, the population has reached 3,682 tigers across 58 reserves covering over 84,000 sq km.

### Key Points:

- **Uneven Distribution:** Nearly 40% of India's tigers are concentrated in only 11% of tiger reserves, leading to overcrowding in places like Corbett and Kaziranga while other reserves remain underutilised.
- **The "Lantana Tigers" Phenomenon:** The spread of the invasive plant *Lantana camara* has forced tigers to adapt to degraded landscapes, where they increasingly hunt livestock and live near human settlements.
- **Landscape-Based Framework:** Future success depends on strengthening wildlife corridors to facilitate gene flow and reviving underperforming landscapes like Palamau and Indravati.

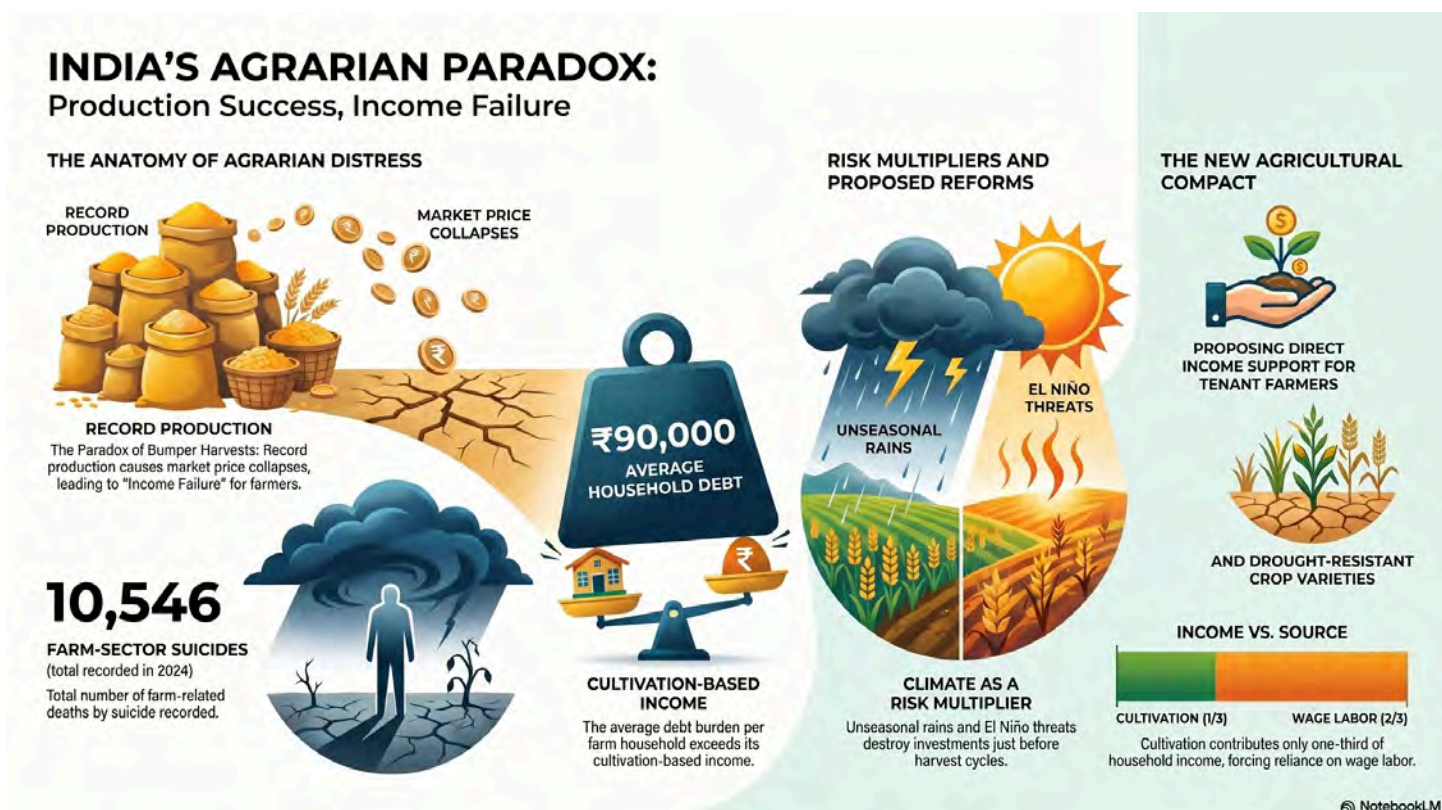
### Prelims Facts (One Liners):

- **75% of Global Wild Tigers:** The approximate share of the world's tiger population hosted by India.
- **Corbett Tiger Reserve:** The reserve with the highest tiger density in India (14.65 per 100 sq km).

**MCQ Practice:** Q. What does the term "Lantana Tigers" refer to in the context of Indian conservation? A) A new subspecies of tiger found in Odisha. B) Tigers that have adapted to survive in degraded ecosystems dominated by invasive plants. C) Tigers that are exclusively found in the Sundarbans. D) A specific group of tigers used for translocation projects. Answer: B (Tigers are increasingly using lantana thickets outside reserves and hunting cattle in human-dominated landscapes.)



## Topic 3: Agrarian Distress in India: A New Deal for Farmers in a Changing Climate



**Summary:** Despite recording bumper harvests, Indian farmers face a paradox of "Production Success, Income Failure" due to falling market prices and rising debt. Climate change has acted as a risk multiplier, with 10,546 farm-sector suicides reported in 2024 alone.

**Background:** Agrarian distress is rooted in structural issues such as land fragmentation and a debt burden that exceeds ₹90,000 per average farm household.

### Key Points:

- **Income and Debt Vulnerability:** Cultivation contributes only one-third of household income, forcing many to rely on wage labour or private services.
- **Climate Risks:** Increasing weather extremes, such as unseasonal rain and the emerging threat of El Niño, wipe out investments just before harvest.
- **Proposed Reforms:** There is a need for a "New Agricultural Compact" that includes direct income support for tenant farmers and the promotion of drought-resistant crop varieties.

### Prelims Facts (One Liners):

[Click here to access Monthly Magazine](#)

[Click here to access Yojana Magazine](#)

[Click here to access Kurukshetra Magazine](#)

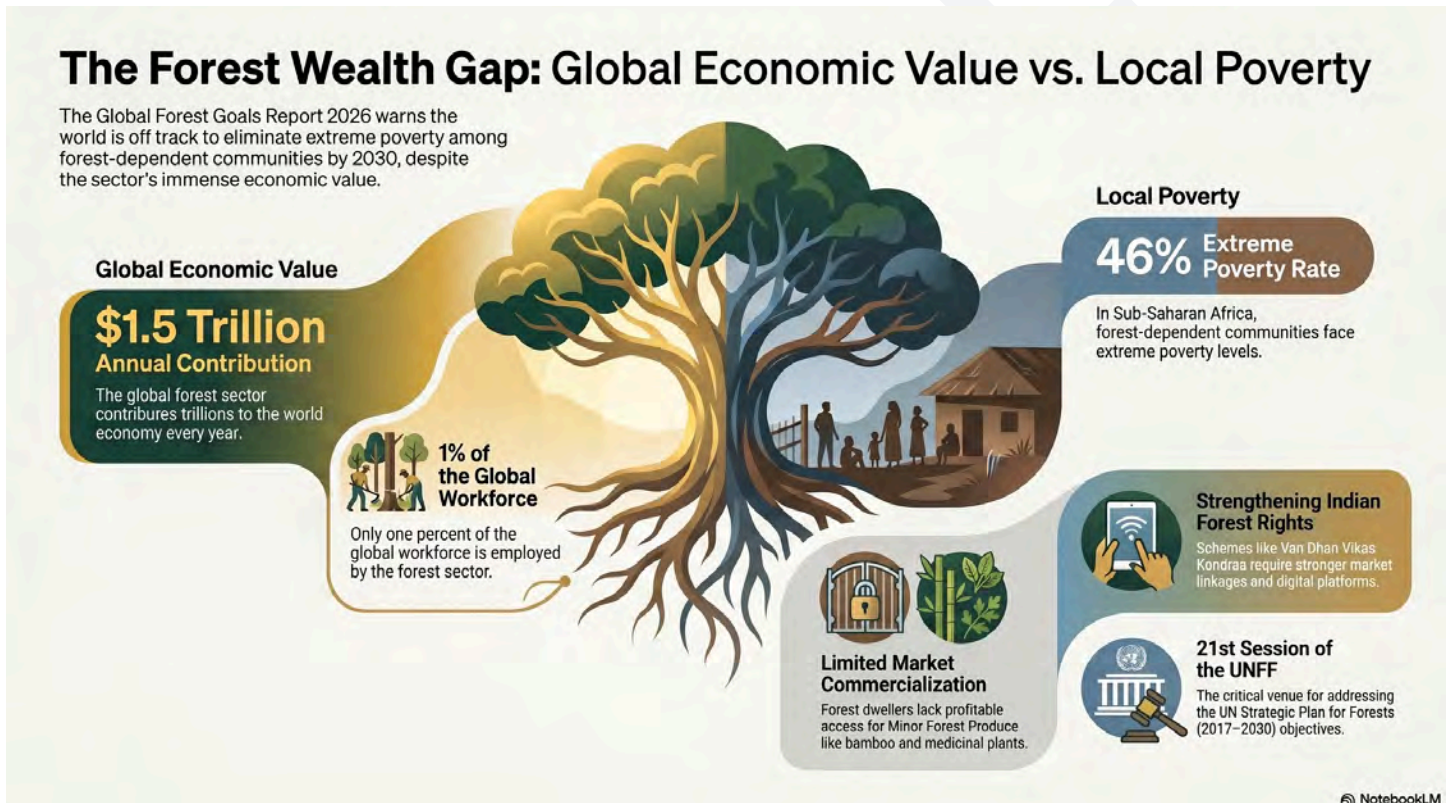
[Click here to access PIB Summary](#)



- **₹90,000:** The average farm household debt as per NABARD's Situation Assessment.
- **10,546 Suicides:** The number of persons engaged in the farm sector who died by suicide in 2024.

**MCQ Practice:** Q. According to the source, what is the "Paradox of Bumper Harvests" in India? A) High production leading to food shortages in cities. B) Increased production resulting in lower market prices and reduced farmer earnings. C) Success in exports leading to higher domestic prices. D) Record harvests occurring only in areas with no irrigation. **Answer: B** (Increased production often leads to a fall in market prices, reducing the income farmers actually take home.)

## Topic 4: Forest-Dependent Communities and the Challenge of Ending Extreme Poverty



**Summary:** The Global Forest Goals Report 2026 warns that the world is off track to eliminate extreme poverty among forest-dependent communities by 2030. While the forest sector is worth \$1.5 trillion globally, these benefits rarely reach the poorest populations.



**Background:** This objective is part of the UN Strategic Plan for Forests (2017–2030) and is discussed during the 21st Session of the UN Forum on Forests (UNFF).

**Key Points:**

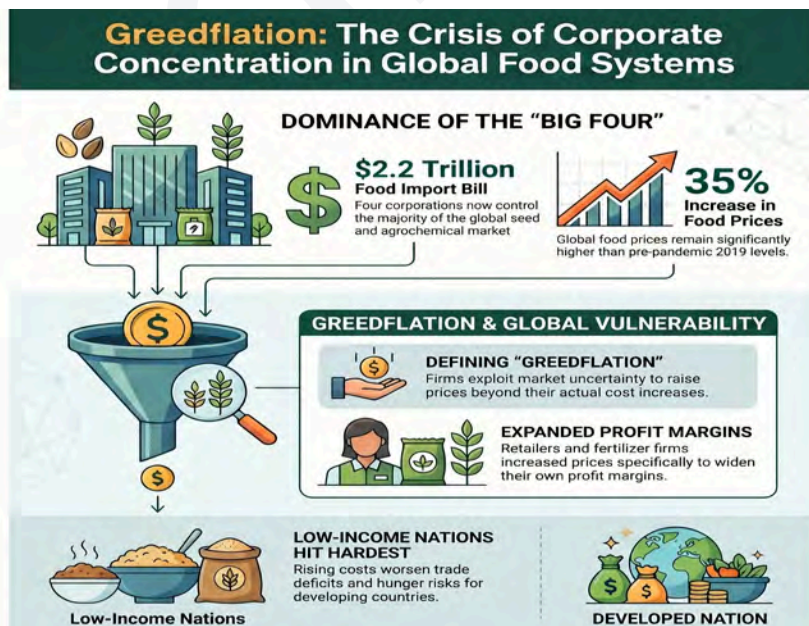
- **Economic Barriers:** Forest dwellers lack access to profitable markets and face limited commercialisation of Minor Forest Produce (MFP) like bamboo and medicinal plants.
- **Regional Disparity:** Sub-Saharan Africa remains a hotspot for forest-dependent poverty, with extreme poverty levels reaching nearly 46%.
- **Indian Context:** Schemes like Van Dhan Vikas Kendras and the Forest Rights Act, 2006, are positive steps but require stronger market linkages and digital platforms.

**Prelims Facts (One Liners):**

- **1% of Global Workforce:** The percentage of people employed by the global forest sector.
- **\$1.5 Trillion:** The annual contribution of the global forest sector to the world economy.

**MCQ Practice:** Q. The Global Forest Goals Report 2026 was released during which session of the United Nations Forum on Forests (UNFF)? A) 15th Session B) 21st Session C) 10th Session D) 30th Session **Answer: B** (The report was released during the 21st Session of the UNFF.)

**Topic 5: Geopolitical Turmoil and Rising Corporate Control in Global Food Systems**



**Summary:** Ongoing geopolitical conflicts and mega-mergers have led to a concentration of power in the agrifood sector, where four firms now dominate the global seed and agrochemical market. This has resulted in "greedflation," where corporate profits rise even as global food security declines.

**Background:** A report by IPES–Food highlights that global food prices have remained 35% higher than 2019 levels, with the global food import bill hitting a record \$2.2 trillion in 2025.

### Key Points:

- **Corporate Concentration:** Mega-mergers since 2008 have reduced competition, making farmers dependent on a handful of corporations for seeds and fertilizers.
- **Greedflation:** Evidence suggests major grocery retailers and fertilizer firms increased prices beyond their cost increases to expand profit margins during recent crises.
- **Developing Country Impact:** Rising import costs disproportionately affect low-income nations, worsening trade deficits and hunger risks.

### Prelims Facts (One Liners):

- **\$2.2 Trillion:** The record global food import bill reached in 2025.
- **Greedflation:** A term used when firms exploit market uncertainty to increase margins beyond actual cost increases.

**MCQ Practice:** Q. What term is used to describe firms exploiting market uncertainty to increase margins beyond actual cost increases? A) Hyper-inflation B) Stagflation C) Greedflation D) Deflation Answer: C (The source defines "greedflation" or "profit-led inflation" as the exploitation of market instability.)



## Topic 6: Global Wildfire Crisis in 2026



**Summary:** In early 2026, wildfires scorched 150 million hectares of land globally, a figure 50% higher than the 2012–2025 average. Climate change has increased potential burning hours by 36% since 1975, creating a "vicious cycle" of warming and fires.

**Background:** The World Weather Attribution (WWA) group notes that extreme fire-weather days have increased by up to 233% in some regions due to global warming.

### Key Points:

- **Regional Devastation:** Africa was the worst affected with 85 million hectares burned, while India saw significant outbreaks in Andhra Pradesh, Chhattisgarh, and Madhya Pradesh.
- **El Niño Driver:** The warm phase of the El Niño Southern Oscillation in 2026 is expected to intensify drought conditions and expand wildfire-prone areas.
- **Health Hazards:** Wildfires release toxic fine particulate matter (PM2.5), which WHO identifies as a major threat to global public health.

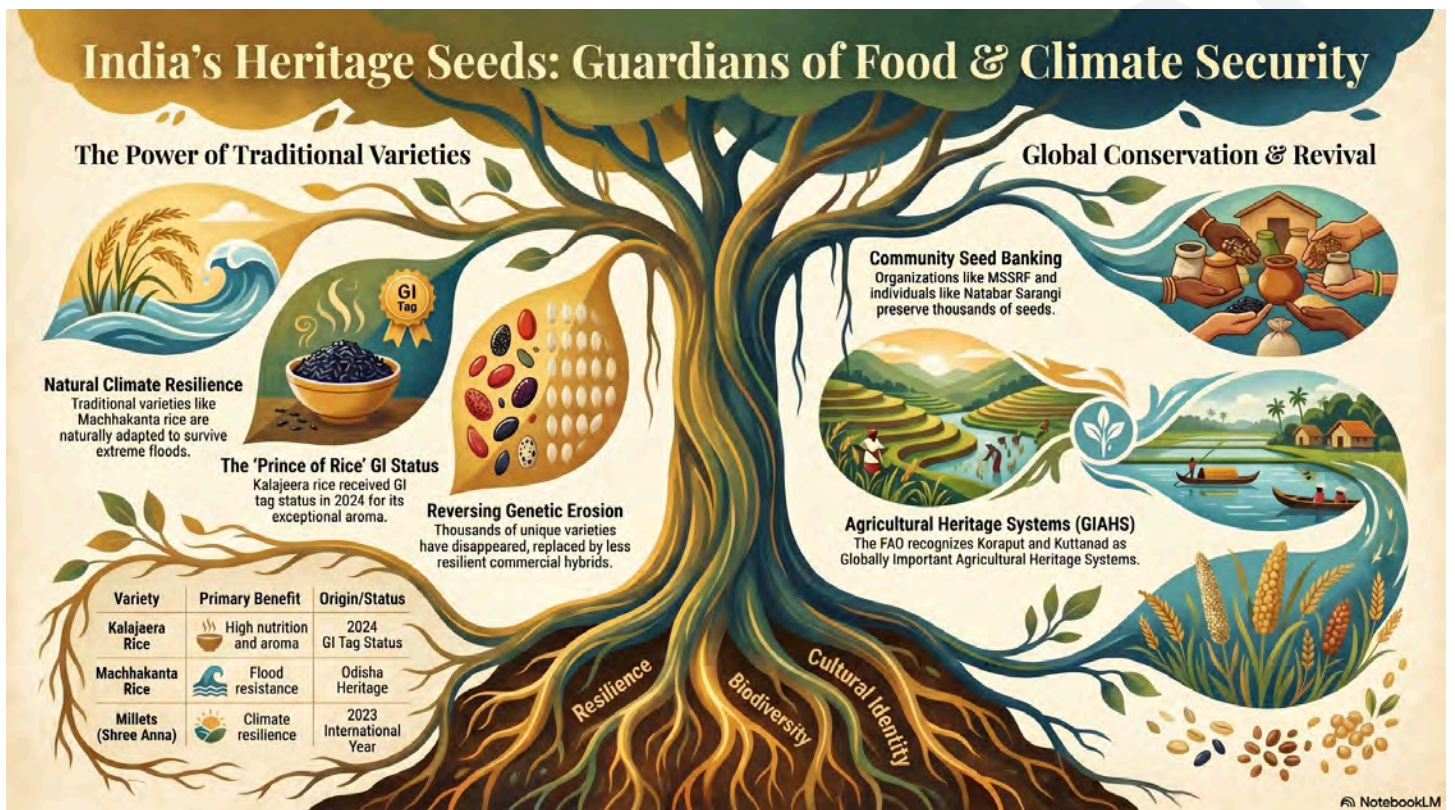
### Prelims Facts (One Liners):



- **150 Million Hectares:** Land burned globally between January and April 2026.
- **36% Increase:** Rise in annual potential burning hours since 1975.

**MCQ Practice:** Q. According to the WWA, by what percentage did potential burning hours increase between 1975 and 2024? A) 15% B) 20% C) 36% D) 50% Answer: C (The sources state that potential burning hours increased by 36% in this period.)

## Topic 7: Traditional Varieties of Seeds in India



**Summary:** Traditional seed varieties, or landraces, are critical for India's nutritional and climate security because of their natural adaptation to local agro-climatic conditions. However, the Green Revolution's focus on high-yielding varieties (HYVs) has led to significant genetic erosion of these heritage seeds.

**Background:** In regions like Koraput, Odisha, thousands of traditional rice varieties have disappeared over time, replaced by commercial hybrids.

### Key Points:



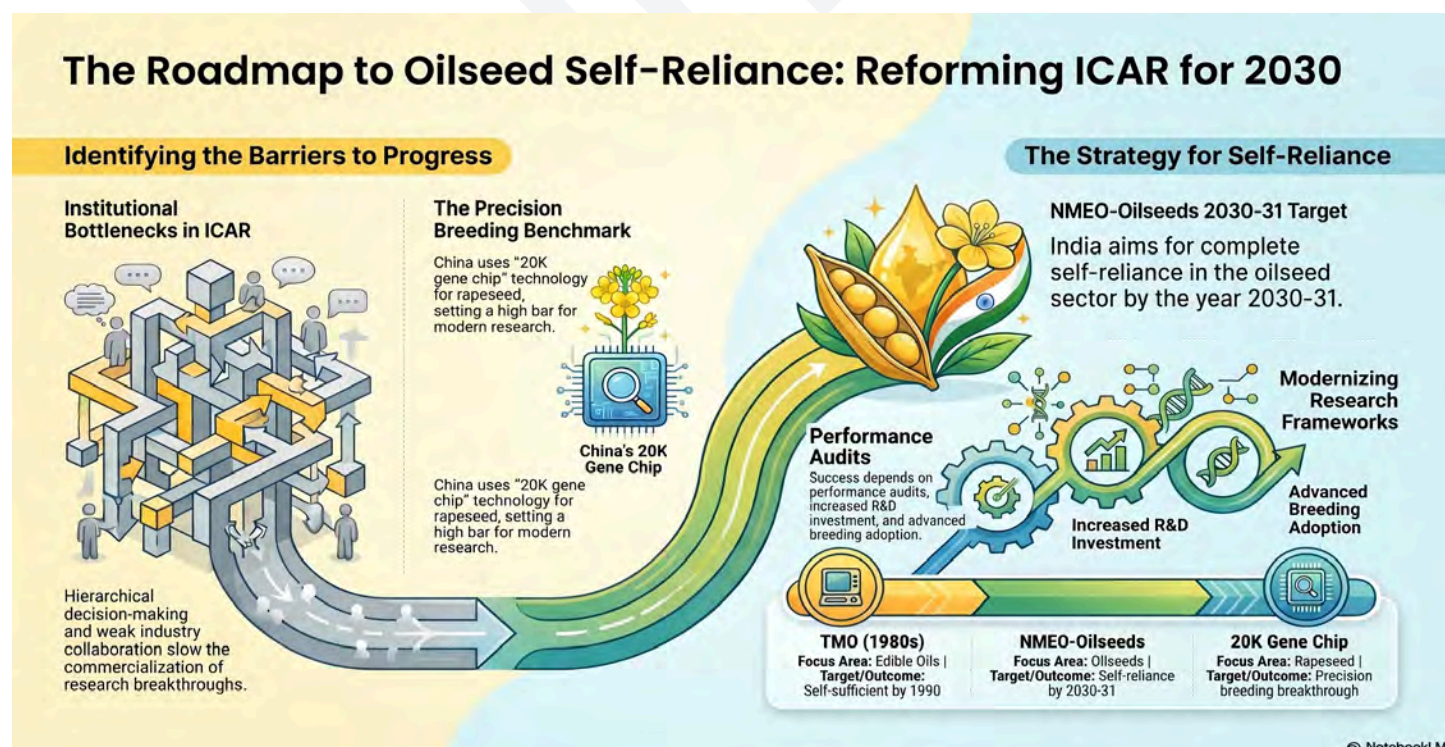
- **Climate Resilience:** Varieties such as Machhakanta rice are flood-resistant, while Kalajeera rice is prized for its nutritional value and aroma.
- **Conservation Movements:** Community seed banks, such as those supported by the MSSRF, and individuals like Natabar Sarangi are working to preserve thousands of indigenous varieties.
- **Millet Revival:** Initiatives like the Shree Anna Abhiyaan and the International Year of Millets (2023) have boosted global recognition of these climate-resilient crops.

**Prelims Facts (One Liners):**

- **Kalajeera Rice:** A traditional aromatic rice from Odisha that received GI tag status in 2024.
- **GIAHS:** FAO’s Globally Important Agricultural Heritage Systems, which include sites like Koraput and Kuttanad.

**MCQ Practice:** Q. Which traditional rice variety is known as the "Prince of Rice" and received a GI tag from Odisha in 2024? A) Kalanamak B) Navara C) Kalajeera D) Machhakanta  
 Answer: C (Kalajeera rice is known for its aroma and nutritional value and received GI status.)

**Topic 8: Revitalising Agricultural Research for India’s Food and Oilseed Security**



**Summary:** There is an urgent need for institutional reforms within the Indian Council of Agricultural Research (ICAR) to address stagnating productivity, particularly in the oilseed sector. India aims to achieve self-reliance in oilseeds by 2030-31 through the National Mission on Edible Oils (NMEO).

**Background:** China's recent breakthrough in rapeseed cultivation using precision breeding and "20K gene chip" technology serves as a benchmark for modern agricultural research.

**Key Points:**

- **ICAR Challenges:** hierarchical decision-making and weak academia-industry collaboration have slowed the commercialisation of breakthroughs like genome-edited rice.
- **The TMO Legacy:** In the 1980s, the Technology Mission on Oilseeds (TMO) successfully made India self-sufficient in edible oils by 1990.
- **Future Strategy:** Success requires performance audits of research institutions, increased R&D investment, and the adoption of advanced breeding technologies.

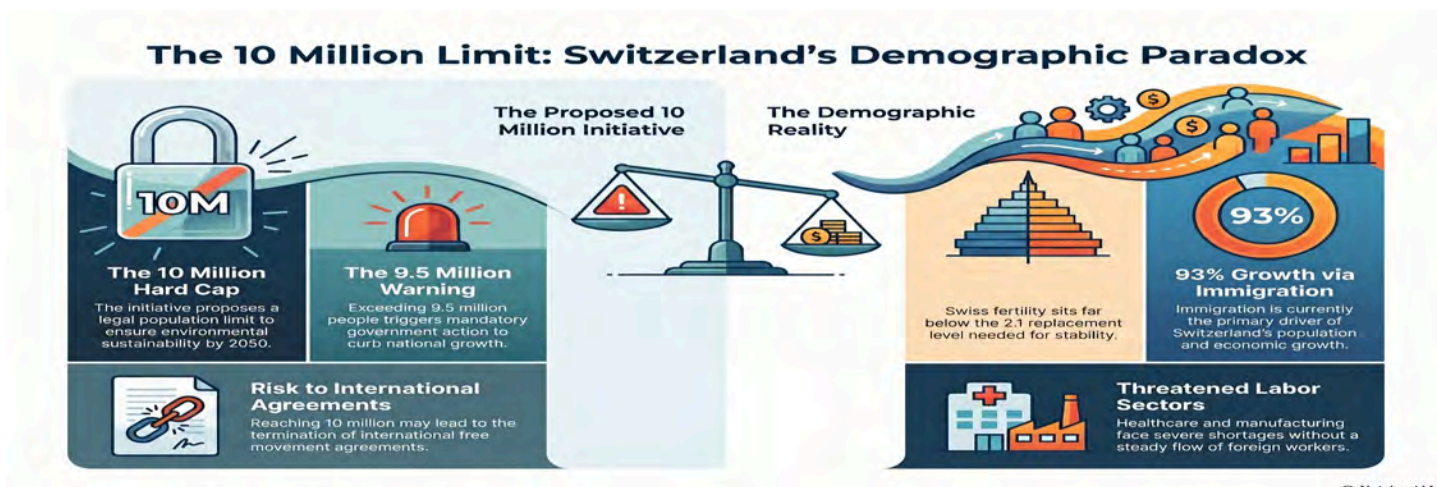
**Prelims Facts (One Liners):**

- **NMEO-Oilseeds:** Target for self-reliance in oilseeds by 2030-31.
- **20K Gene Chip:** Precision breeding technology used by China for rapeseed breakthroughs.

**MCQ Practice:** Q. The National Mission on Edible Oils-Oilseeds (NMEO-Oilseeds) targets achieving self-reliance by which year? A) 2027-28 B) 2029-30 C) 2030-31 D) 2035-36  
Answer: C (The source specifies the target year for self-reliance as 2030-31.)



## Topic 9: Switzerland's Population Cap Referendum



**Summary:** Switzerland recently held a referendum on the 'No to a Switzerland with 10 Million!' initiative, which proposes capping the national population at 10 million by 2050 to ensure sustainability. The move highlights a demographic paradox: the country relies on immigration for 93% of its growth while facing a "demographic winter" with a low fertility rate.

**Background:** Switzerland's fertility rate stands at 1.29, well below the replacement level of 2.1, making immigration the primary driver of economic stability.

### Key Points:

- **The Referendum Terms:** If the population exceeds 9.5 million, the government must curb growth; at 10 million, international free movement agreements may be terminated.
- **Economic Impact:** A strict cap could lead to severe labour shortages in sectors like healthcare and manufacturing, which are heavily dependent on foreign workers.
- **Sustainability vs. Demography:** The debate enters the realm of ecological footprints versus the necessity of a young workforce to support an ageing population.

### Prelims Facts (One Liners):

- **1.29:** Switzerland's fertility rate in 2024.
- **93% Growth:** The share of Swiss population growth attributed to immigration.



**MCQ Practice:** Q. Which country recently voted on a referendum to cap its permanent population at 10 million by 2050? A) Norway B) Finland C) Switzerland D) Sweden Answer: C (Switzerland held the 'No to a Switzerland with 10 Million!' referendum.)

## Topic 10: Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2025

### India's Unincorporated Sector: The ASUSE 2025 Snapshot

NSSO's ASUSE 2025 highlights a robust recovery in manufacturing, trade, and services. While digital adoption and female entrepreneurship are rising, the sector still faces hurdles in productivity and credit access.

#### Growth Drivers & Formalization

##### Robust Post-Pandemic Recovery

Significant growth in female entrepreneurship and digital payment adoption.



##### Rural Employment Catalysts

Job creation in rural areas is driven by Mudra loans and Self-Help Groups.



##### Path to Formalization

Increased GST and UDYAM registrations are integrating small enterprises into the formal economy.



#### Purpose & Enablers Framework

##### Core Sectors



Digital Platforms & Female Entrepreneurship

##### Rural Focus Unincorporated Enterprises



Mudra Loans & SHGs

##### Formalization Small Enterprises



UDYAM & GST Registration

#### Scope & Structural Challenges



##### Survey Scope (NSSO/MoSPI)

Covers manufacturing, trade, and services, excluding construction and registered factories.

##### The Productivity Gap

Small-scale operations continue to struggle with low productivity levels.



##### Limited Institutional Credit

Growth is constrained by a lack of access to formal financial lending.



NotebookLM

**Summary:** The ASUSE 2025 report reveals a robust post-pandemic recovery in India's unincorporated sector, which remains a vital source of non-farm employment. The sector has seen significant growth in female entrepreneurship and digital payment adoption.

**Background:** Conducted by the NSSO under MoSPI, ASUSE covers manufacturing, trade, and services, but excludes the construction sector and registered factories.

#### Key Points:

- **Growth and Employment:** Rural enterprises have notably contributed to job creation, supported by schemes like Mudra loans and SHGs.
- **Formalisation:** Indicators of formalisation have improved through higher GST and UDYAM registrations and the integration of digital platforms.



- **Remaining Challenges:** Low productivity due to small-scale operations and limited access to formal institutional credit continue to constrain growth.

**Prelims Facts (One Liners):**

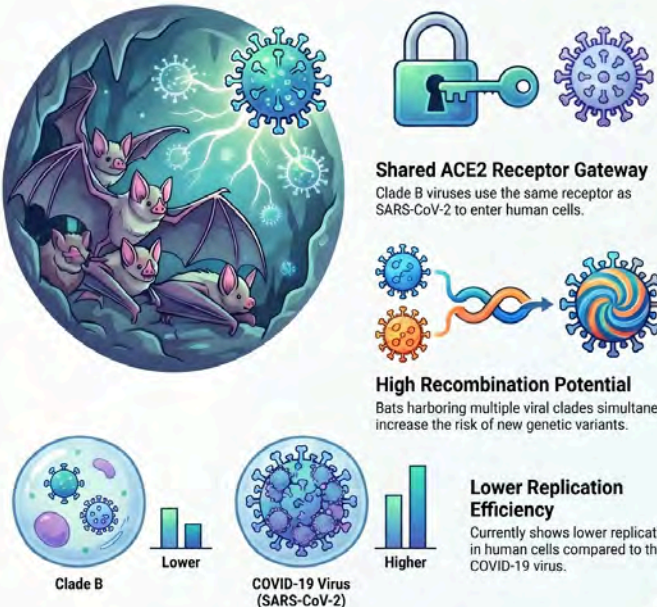
- **NSSO:** The body responsible for conducting the ASUSE under the Ministry of Statistics.
- **UDYAM Registration:** A key tool for the formalisation of small enterprises.

**MCQ Practice:** Q. Regarding the ASUSE 2025, which of the following is correct? A) It is conducted by the NSSO under MoSPI. B) It covers all enterprises, including those registered under the Companies Act. C) It excludes trade establishments. D) It is conducted by NITI Aayog. Answer: A (The survey is conducted by the National Sample Survey Office (NSSO) under the Ministry of Statistics.)

**Topic 11: Novel SARS-COV-2-Related Coronaviruses Discovered in Horseshoe Bats**

## The Next Viral Frontier: Clade B Coronaviruses

### Emerging Threat: Clade B Characteristics




**Shared ACE2 Receptor Gateway**  
Clade B viruses use the same receptor as SARS-CoV-2 to enter human cells.

**High Recombination Potential**  
Bats harboring multiple viral clades simultaneously increase the risk of new genetic variants.

**Lower Replication Efficiency**  
Currently shows lower replication in human cells compared to the COVID-19 virus.

### The Strategy: One Health Surveillance



**The One Health Approach**  
Integrating Human Health and Environmental Health.

**Continuous Wildlife Surveillance**  
Detecting spillover risks in natural reservoirs before they adapt to human hosts.

**Horseshoe Bats as Primary Reservoirs**  
Rhinolophus species are the natural hosts for SARS-related coronavirus groups.

A strategy integrating human, animal, and environmental health monitoring.

NotebookLM



**Summary:** Scientists have identified a new group of coronaviruses, labeled "Clade B," in horseshoe bats in Thailand. These viruses are significant because they can interact with the same human ACE2 receptor that SARS-CoV-2 uses to enter human cells.

**Background:** Horseshoe bats (*Rhinolophus* species) are the natural reservoirs for several SARS-related coronaviruses, including those linked to the 2002 and 2019 outbreaks.

**Key Points:**

- **Viral Characteristics:** While the newly discovered virus (RacCS20637) can bind to ACE2, it currently shows lower replication efficiency in human cells compared to SARS-CoV-2.
- **Complex Ecology:** Some bats were found to carry multiple viral groups (Clade A and Clade B) simultaneously, increasing the chance of genetic recombination.
- **One Health Strategy:** The findings underscore the need for continuous wildlife surveillance to detect spillover risks before they adapt to human hosts.

**Prelims Facts (One Liners):**

- **ACE2 Receptor:** The gateway used by both SARS-CoV-2 and the newly discovered Clade B viruses.
- **One Health:** An approach that integrates human, animal, and environmental health monitoring.

**MCQ Practice:** Q. Horseshoe bats (*Rhinolophus* species) are primarily recognised as natural reservoirs for which group of viruses? A) Influenza A B) SARS-related coronaviruses C) Ebola virus D) Zika virus **Answer: B** (Horseshoe bats are the primary hosts of several SARS-related coronaviruses, including those linked to COVID-19.)

