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SCIENCE AND TECHNOLOGY

## New Type Of Host Defence Against Zika, And Dengue Viruses Revealed

**CONTEXT:** Researchers discovered a new way our body fights Zika and dengue viruses: using extracellular vesicles as decoys to block the viruses from entering cells.



### HOW OUR BODY FIGHTS ZIKA, DENGUE VIRUSES: EXTRACELLULAR VESICLES AS DECOYS

#### Viral Transmission - A complex game of hide and seek

- Viruses need to be at the right place to infect new cells (target cells).
- They are selective and can only infect cells with specific receptors on their surface.
- Example: HIV can only infect cells with CD4 protein, while SARS-CoV-2 uses ACE2 receptor.

#### Viral transmission - A race against time

- Viruses replicate and try to transmit before the immune system destroys them.
- One strategy is to have receptors on multiple cell types for faster transmission through bodily fluids.

#### PS receptor - A double edged sword

- PS protein is expressed by dying cells to signal immune system for removal.
- Immune cells have PS receptors to destroy these cells.
- Viruses can mimic this process (apoptotic mimicry) to infect immune cells.
- This presence of virus in bodily fluids (like semen, saliva) doesn't necessarily mean transmission through these routes.

#### Our body's defense - Extracellular vesicles

- Scientists discovered a new defense mechanism against Zika and other viruses.
- Extracellular vesicles (EVs) are used to inhibit viral infection.
- EVs are abundant in saliva and semen and have PS proteins on

their surface (similar to viruses).

- Experiments showed EVs compete with viruses for the same receptors, blocking viral entry.

#### Impact of this discovery

- This finding applies to viruses that use PS receptor for entry (Zika, dengue, chikungunya etc).
- It has no effect on viruses with different entry mechanisms (HIV, SARS-CoV-2).
- This opens new avenues for research on potential therapeutic applications.
- An interesting idea - Perhaps these viruses evolved to be mosquito-borne as they couldn't spread through saliva or semen due to EVs.

ECONOMICS

## 'Inflation Vulnerable To Rising Heat'

**CONTEXT:** The RBI warns of potential inflation risks due to extreme weather events despite recent progress in controlling price stability.

### Climate risk

RBI officials flag risks to inflation from climate change, cite World Meteorological Organisation's red alert on global warming



■ Officials cite WMO's use of IMD data and its call for a 'collective response'

■ Point to the onset of La Nina, waning of El Nino as providing hope on rains

■ RBI officials underline that the softening of inflation provides growth impulses

**BACKGROUND:** Despite recent progress lowering inflation to 4.9%, the RBI worries extreme weather and political tensions could disrupt food production and oil prices, pushing inflation back up. La Nina rains and the RBI's anti-inflation policies offer some hope.

### INDIA'S INFLATION OUTLOOK: A BALANCING ACT

- **RBI's Focus:** The Reserve Bank of India (RBI) is keeping a watchful eye on inflation, despite a recent dip to 4.9% (March 2024). Their primary concern is Consumer Price Index (CPI) inflation, reflecting the average price movement of everyday goods and services.
- **Potential Threats:** The RBI identifies two key risks to maintaining low inflation:
  - **Extreme Weather:** The World Meteorological Organisation (WMO) warns of 2024 potentially being the hottest year on

record, with a rise in extreme weather events. This could disrupt agricultural production, leading to higher food prices and pushing inflation up.

- **Geopolitical Tensions:** Prolonged geopolitical issues can cause volatile crude oil prices. Since oil is a crucial input for many goods and services, its price fluctuations can contribute to inflation.

- **Reasons for Optimism:** Even with these concerns, there are some positive signs:
- **La Nina Watch:** The chances of La Nina conditions emerging after June 2024 are high. La Nina typically brings heavy rainfall to India, potentially boosting agricultural output and potentially lowering food prices.
- **Disinflationary Policy:** The recent decrease in inflation suggests the RBI's anti-inflationary monetary policies might be having a positive impact.

**CONCLUSION:** India's inflation outlook presents a delicate balancing act for the Reserve Bank of India (RBI) amid potential risks from extreme weather events and geopolitical tensions. While recent progress in lowering inflation to 4.9% is promising, the looming threats of disrupted food production and volatile oil prices highlight the need for vigilance. The potential emergence of La Nina conditions offers hope for improved agricultural output and lower food prices, complementing the RBI's disinflationary policies. However, continued monitoring and strategic interventions will be essential to navigate these challenges and maintain price stability for the economy.

## POLITY AND GOVERNANCE

### Was Your Apology as Big as Your Ads, SC Asks Patanjali

**CONTEXT:** The Supreme Court is questioning Patanjali, Ramdev and Balkrishna for publishing misleading advertisements about their Ayurvedic products and seeking an explanation from the government for omitting a rule that could have prevented such practices.

**BACKGROUND:** Patanjali's misleading Ayurvedic product ads landed them in hot water with the Supreme Court. Despite promising to stop in November 2023, the ads continued, triggering contempt action against Patanjali, Ramdev, and his associates. The court wasn't satisfied with their initial apologies and demanded a public one. Though Patanjali claims a hefty cost for newspaper apologies, the court questioned if they were as prominent as their usual ads. Further complicating things, the court seeks an explanation from the government for removing a rule that could have prevented such misleading advertising.

#### MAJOR POINTS:

#### PATANJALI IN SOUP FOR MISLEADING ADS: SUPREME COURT DEMANDS ANSWERS

##### Contempt Charges for Misleading Ads:

- Patanjali, co-founded by yoga guru Ramdev, along with Ramdev and his associate Balkrishna, face contempt action from the Supreme Court.
- The reason: Publishing "objectionable and misleading advertisements" about their Ayurvedic products.

#### Broken Promises and Unsatisfactory Apology:

- Patanjali had promised to stop these ads in November 2023 but continued, violating their undertaking to the Court.
- The Court wasn't impressed with their initial apologies submitted through affidavits.

#### Scrutiny of Public Apology:

- Patanjali claimed to have spent a significant sum on a public apology published in 67 newspapers.
- However, the Supreme Court questioned whether the apology was as prominent and expensive as their usual large-scale advertisements.
- They requested to see the original newspapers with the apology placement.

#### Government's Role in Question:

- The Court raised concerns about the AYUSH Ministry removing a rule (Rule 170) allowing action against misleading advertisements.
- The Court questioned the government's reasoning, especially considering its commitment to consumer protection.

**CONCLUSION:** the Supreme Court's scrutiny of Patanjali's misleading advertisements reflects a growing concern for consumer protection and corporate accountability. The demand for a public apology, along with questions about the government's role in removing regulations against such practices, underscores the need for stricter enforcement and ethical advertising standards. This case highlights the importance of transparency, honesty, and regulatory oversight in the marketing of products, particularly in sensitive sectors like healthcare and wellness. Moving forward, both companies and regulators must uphold integrity and ensure that consumer rights are safeguarded.

## POLITY AND GOVERNANCE

### An Overview of The PMAY-U Scheme

**CONTEXT:** The Pradhan Mantri Awas Yojana-Urban (PMAY-U), a program launched to address the housing shortage in Indian cities, has faced challenges in achieving its targets.



**THE GIST**

- While the PMAY is a centrally sponsored scheme both the Union and the State governments are supposed to financially contribute to it.
- The current estimates suggest that in the Indian urban landscape around 40% (according to the World Bank, 49%) of the people are living in both designated and informal slums. Hence, the success of the PMAY was dependent on addressing the housing question in the slums.
- It is worth noting that the Centre's contribution to the overall investment expenditure under this scheme is just about 25%, or ₹2.03 lakh crore. The bulk of the money is shelled out by the beneficiary households themselves.

**BACKGROUND:** Launched in 2015, the Pradhan Mantri Awas Yojana aimed to bridge India's massive housing gap, especially for the poor. It aimed to provide affordable housing for all by 2022, addressing the needs of slum dwellers and low-income groups through various schemes.

**PRADHAN MANTRI AWAS YOJANA (PMAY-U): AN OVERVIEW****BASICS:**

- Launched in 2015, PMAY aimed to bridge the significant housing gap in India, particularly for low-income groups.
- The program envisioned "Housing for All" by 2022, addressing the needs of slum dwellers and economically weaker sections through various sub-schemes.

**Objectives:**

- Rehabilitate slum dwellers by involving private developers (in-situ slum redevelopment - ISSR).
- Promote affordable housing for underprivileged sections through Credit Linked Subsidy Schemes (CLSS).
- Encourage collaboration between public and private sectors for affordable housing projects.
- Provide subsidies for beneficiary-led construction (BLC).

**Current Status:**

- Despite extensions, the "Housing for All" goal by 2022 remains unachieved.
- A significant urban housing shortage persists (estimates vary between 60 lakh and 2.9 crore).
- PMAY data indicates a shortfall of around 40 lakh houses between sanctioned and completed units.
- The crucial ISSR vertical, meant to address slum rehabilitation, has fallen short with only 2.1 lakh sanctioned houses for eligible beneficiaries.

**Challenges:**

- **Private Sector Participation:**
  - High-rise buildings in slum redevelopment projects created new problems for residents (increased utility costs, unsuitable layouts).
  - Land scarcity, especially on government-owned land (airports, railways, forests), hindered ISSR.
  - Lack of community involvement in planning led to projects not meeting residents' needs.
- **City Master Plans:**
  - City development plans prioritize large-scale, expensive

solutions, often neglecting social housing needs.

- The market is expected to address social housing, creating challenges for PMAY's success.

**Financial Breakdown:**

- The central government contributes only about 25% of the total investment.
- Beneficiaries themselves bear the majority of the cost (around 60%).
- State governments and urban local bodies contribute the remaining 15%.
- The scheme primarily caters to those with land ownership (BLC and CLSS verticals), neglecting the poorest and landless (only 2.5% of beneficiaries are slum dwellers under ISSR).

**CONCLUSION:** PMAY-U strives to tackle housing shortages for the economically weaker and slum dwellers. Challenges like unmet goals by 2022, limited central funding, and private sector complexities require strategic reforms. Enhancing community involvement, resolving land scarcity, and improving financial mechanisms are vital for PMAY-U's mission of affordable housing for all.

**POLITY AND GOVERNANCE****How Is India Planning To Boost EV Production?**

**CONTEXT:** In a bid to make India a hub for electric vehicle (EV) manufacturing, the government unveiled a new policy in March 2024. The policy's details and how it might affect both international and domestic EV companies.

**THE GIST**

- The Union government on March 15 approved a policy to promote India as a manufacturing hub for Electric Vehicles (EVs).
- Tata Motors, as reported by Reuters in December 2023, had opposed the Tesla proposal. It argued that lowering duties would hit the domestic industry.
- I.V. Rao, Distinguished Fellow at The Energy and Resources Institute (TERI), thinks that global players setting up shop in India must consider local circumstances, like the environment, roads, driving behaviour and usage conditions.

**INDIA REVS UP ELECTRIC VEHICLE PRODUCTION: A NEW POLICY ANALYZED****India's EV Ambitions:**

- The Indian government unveiled a new policy in March 2024 to establish the country as a major electric vehicle (EV) manufacturing hub.
- This policy aims to attract global EV companies while nurturing domestic players in the industry.

**Key Policy Measures:**

- Reduced import duties on electric vehicles (EVs) with a minimum cost of \$35,000, subject to setting up a manufacturing unit in India within three years.
- Incentives for manufacturers to achieve localization targets

(25% by year 3, 50% by year 5).

- A cap on imported EVs under the scheme (40,000 units) and minimum investment requirements (\$800 million).

#### Impact on Domestic Players:

- Some domestic players, like Tata Motors, have expressed concerns about the policy potentially harming the domestic industry.
- Analysts believe the policy benefits may be skewed towards high-end EV manufacturers, not impacting the budget-friendly segment dominated by Indian players.
- The policy might encourage collaboration between global EV giants and Indian companies.

#### Challenges and Considerations for EV Adoption:

- Experts emphasize the need for global EV players to adapt their offerings to Indian road conditions, driving patterns, and environmental factors.
- Lack of widespread charging infrastructure and limited affordable EV options are currently hindering wider EV adoption.
- A report by the Confederation of Indian Industry (CII) estimates India needs 1.3 million charging stations by 2030 to support significant EV uptake.
- Focus on building a robust EV ecosystem is crucial, ensuring reliable components, service support, and a sustainable approach to manufacturing.

#### Looking Ahead:

- The success of India's EV ambitions hinges on balancing incentives for global players with fostering domestic innovation and creating a consumer-friendly EV market.

- This trend contrasts with China and Vietnam, whose growth has been more broad-based and accompanied by improvements in human development.

#### • The Importance of Human Development:

- The report emphasizes that economic growth alone is insufficient for achieving a more equal and prosperous society.
- Investments in human development, including education and healthcare, are crucial for creating an inclusive economy.
- States with higher human development indicators have also achieved higher and more sustainable economic growth rates.

#### • India's Ranking:

- Despite being the world's fifth-largest economy, India ranks a disappointing 134th in the Human Development Index (HDI).
- This highlights the disconnect between economic growth and human well-being in India.

#### • Policy Implications:

- The report argues that economic growth should not be the sole focus of economic policy.
- Instead, the government should prioritize human development initiatives that empower the poor and reduce inequality.
- Simply providing handouts is not enough; creating jobs and opportunities is essential for sustained and inclusive growth.

#### • A Warning Sign:

- The report concludes by expressing concern about the long-term sustainability of such high levels of inequality.
- It warns that social and political instability could result if the government fails to address this pressing issue.

## POLITY AND GOVERNANCE

# Towards A Less Poor And More Equal Country

**CONTEXT:** Aiming for both high economic growth and reduced inequality, India faces a challenge. A new report finds wealth concentrating at the top while the poor struggle. It argues that economic growth isn't enough and that investments in human development are essential for a more equal and prosperous future.

### INDIA'S BALANCING ACT: GROWTH VS. EQUALITY

**India's tightrope walk:** Reconciling rapid economic expansion with equitable wealth distribution.

- **The Problem of Rising Inequality:**
  - A recent report by World Inequality Lab reveals a troubling trend: income and wealth inequality in India are at historic highs.
  - The top 1% now control a significant share of the national income and wealth, while the bottom half of the population struggles.
  - This widening gap threatens to undermine both economic growth and poverty reduction efforts.
- **Historical Context:**
  - Inequality actually decreased in India between 1960 and 1980, but it began to rise again with economic reforms in the 1980s and 1990s.

## POLITY AND GOVERNANCE

# Reversing The Global Democratic Recession

**CONTEXT:** Despite the disillusionment, for a variety of reasons, the need to fortify democratic foundations has to be ongoing and collaborative

### IS DEMOCRACY IN DECLINE? A LOOK AT INDIA AND THE WORLD

- **A Disenchanted World:** A new Pew Research Center survey reveals a worrying trend - a decline in trust in democratic systems across 24 countries.
  - While a majority of respondents (77%) still express some optimism about democracy, their openness to alternative models suggests a growing discontent.
  - Support for direct democracy (where citizens vote directly on major issues) is rising, potentially indicating a desire for more citizen participation.
- **The Shift Towards Strong Leadership:** The survey highlights a global move towards strong leadership and quicker decision-making.
  - There's a growing acceptance of rule by experts (58%) and authoritarian models (26%).
  - This trend is particularly evident in lower-income and less-educated demographics.

- **India's Changing Perception of Democracy:** India reflects the global trend towards disenchantment.
  - Support for representative democracy has dropped from 44% in 2017 to 36% in 2023.
  - Conversely, there's a significant rise in support for strong leaders (from 55% to 67%) and rule by experts (from 65% to 82%).
  - Notably, a staggering 85% of Indians now endorse authoritarian or military rule.
- **A Downgraded Democracy:** External reports and indices seem to confirm the decline of Indian democracy.
  - Democracy watchdog organizations classify India as a "hybrid regime" or a "flawed democracy."
  - The V-Dem Institute's 2024 Democracy Report downgrades India on multiple metrics compared to 2018.
- **Strengthening the Foundations of Democracy:** Despite the challenges, there is emphasis on the importance of fortifying democratic institutions.
  - Instability, diverse voices, and open debates are essential features, not weaknesses, of a healthy democracy.
  - two important books that offer frameworks for building strong democracies:
    - "Strengthening Democracy by Design" by Thomas and Upchurch identifies four pillars of a robust democracy: participation, equality, education, and accountability.
    - "The Civic Bargain" by Manville and Ober emphasizes the importance of a "civic bargain system" where citizens collaborate and respect diverse viewpoints.
- **The Path Forward:** Some recommendations for strengthening democracy:
  - Prioritize inclusivity and address societal issues like inequality and injustice.
  - Enhance education, focusing on critical thinking and media literacy.
  - Foster dialogue and negotiation to address political polarization.
  - Create an open space where all voices are heard and concerns addressed.

## POLITY AND GOVERNANCE

## Insuring The Future

**CONTEXT:** India's growing elderly population creates a healthcare challenge. To address this, the insurance regulator wants to make health insurance more inclusive. However, some argue that simply increasing eligibility won't solve the problem; ensuring affordability is equally crucial.

### EXPANDING HEALTH INSURANCE IN AGING INDIA: A NEED FOR AFFORDABILITY

There is a proposal by India's insurance regulator to make health insurance more inclusive, particularly for senior citizens. However, it emphasizes the importance of addressing affordability alongside eligibility.

- **An Aging Population:**
  - India's population is rapidly aging, with estimates suggesting it may have surpassed China's.
  - The India Ageing Report projects a significant rise in the senior citizen population (above 60) from 10% in 2022 to 30% by 2050.
  - This demographic shift mirrors trends in developed countries already grappling with healthcare access for their elderly.
- **The IRDAI Proposal:**
  - The Insurance Regulatory and Development Authority of India (IRDAI) aims to expand health insurance eligibility, including coverage for senior citizens currently excluded.
  - This acknowledges the growing healthcare needs of this demographic.
- **Affordability Concerns:**
  - Some argue that simply increasing eligibility won't solve the problem.
  - Health insurance, particularly for senior citizens, can be expensive due to actuarial principles (costs rise with age).
  - The current proposal might lead to many unaffordable policies, rendering them useless.
- **Lessons from Developed Countries:**
  - Developed countries with similar aging populations face challenges in providing affordable healthcare and senior care.
  - Some rely on government-funded healthcare, while others depend on private insurance, where cost can significantly impact access to quality care.
- **India's Demographic Dividend Opportunity:**
  - The coming decades are crucial for India to capitalize on its "demographic dividend," a large young workforce.
  - However, this requires a healthy and supported elderly population.
  - The breakdown of traditional caregiving structures further highlights the need for affordable healthcare solutions.
- **The Way Forward:**
  - Broadening health insurance eligibility must be accompanied by a significant upgrade in affordable healthcare infrastructure.
  - Only then can India ensure its growing elderly population has access to the care they need.

**CONCLUSION:** India's proposed expansion of health insurance eligibility for senior citizens is a positive step towards addressing the healthcare needs of its aging population. However, for this initiative to




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be truly successful, affordability must be a central focus. By learning from the challenges faced by developed countries and investing in accessible healthcare infrastructure alongside insurance coverage, India can ensure a healthier future for its growing elderly population. This, in turn, will be crucial for capitalizing on the nation's demographic dividend and securing long-term prosperity.

## POLITY AND GOVERNANCE

# Govt. Should Act On FMCG Firms Using 'Misleading' Ads: SC

**CONTEXT:** The Supreme Court of India criticized the government for inaction against FMCG companies that use misleading advertisements to target consumers, especially families with babies and schoolchildren.

**BACKGROUND:** The Supreme Court of India is concerned about misleading advertisements by FMCG companies targeting families with false claims. This came up during a contempt case against Patanjali Ayurved for similar offenses. The court questioned the government's inaction on such misleading ads, especially those targeting vulnerable groups like children.

## SUPREME COURT CALLS FOR ACTION AGAINST MISLEADING FMCG ADVERTISEMENTS

The Supreme Court of India has criticized the government's inaction regarding misleading advertisements by FMCG (Fast Moving Consumer Goods) companies.

- **Targetting Vulnerable Consumers:**
  - The court expressed concern about FMCG advertisements that exploit trust, particularly those targeting families with babies and schoolchildren.

- Justice Kohli highlighted the potential health risks associated with such misleading claims.
- A recent case involving Nestle's baby food products with allegedly high sugar content served as an example.
- **Government's Responsibility:**
  - The court urged the central government to take a more active role in regulating FMCG advertising.
  - Justice Kohli questioned the government's efforts to identify and address companies resorting to deceptive practices.
  - The court noted that the Advertising Standards Council of India had flagged hundreds of problematic advertisements in the past two years, raising concerns about the lack of follow-up action.
- **Broadening the Scope:**
  - The Supreme Court expanded the contempt case against Patanjali Ayurved to include the Ministries of Consumer Affairs and Information & Broadcasting.
  - This move suggests a wider investigation into false advertising practices within the FMCG industry.
- **Previous Concerns:**
  - The current case follows the court's earlier criticism of Patanjali Ayurved's misleading claims about their ayurvedic medicines during the COVID-19 pandemic.
  - Justice Kohli reiterated the court's stance on protecting consumers from deceptive marketing tactics that can negatively impact their health.

**CONCLUSION:** The Supreme Court's intervention highlights the need for stricter regulations and swifter action against misleading FMCG advertisements. This will ensure a fairer marketplace and protect vulnerable consumers, particularly children, from potential health risks associated with deceptive marketing tactics.



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