theIAShub

the IAS hub
Be Your Dream.

AUGUST
23

CRUX 10

10 News. 10 Sources. One Place

THE HINDU
ET
BS
TOI
The Indian EXPRESS
livemint
pib
DownToEarth
FORTNIGHTLY ON POLITICS OF DEVELOPMENT, ENVIRONMENT AND HEALTH
Science Reporter
विज्ञान एवं प्रौद्योगिकी मन्त्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY



MK Yadav Sir

Table of Contents

1. LUPEX
2. Denom Particle
3. Black Eagle
4. Respiratory Syncytial Virus
5. Bhartiya Nyaya Sanhita Bill 2023
6. Real State Sector
7. Kerala Towards Draught
8. CRISPR Cas9
9. PM-DevINE
10. Ultra-Processed Food

TIMES OF INDIA August 23

LUPEX
(Syllabus: GS Paper 3 – Sci & Tech)

ISRO's Lunar Love: India and Japan together will launch Lunar Polar Exploration Mission (LUPEX) by 2025

Context: I**n a joint effort, the space agencies of India and Japan** are embarking on the **Lunar Polar Exploration Mission (LUPEX)**.

- This mission, **slated for a 2025 launch**, aims to assess the feasibility of establishing a lunar base, investigate the presence of water ice, and advance surface exploration technologies.



About Lunar Polar Exploration Mission (LUPEX)

- It's a collaborative project jointly undertaken by the **Japan Aerospace Exploration Agency (JAXA)** and the **Indian Space Research Organisation (ISRO)**.
- The mission's launch is planned for the year 2025.
- **LUPEX aims to employ a rover and lander** to investigate the feasibility of establishing a lunar base, the presence of water ice, and surface exploration technologies.
- The **rover and lander are being developed by JAXA and ISRO**, respectively.
- The rover will carry instruments not only from ISRO and JAXA but also from NASA and the European Space Agency (ESA).

BUSINESS STANDARD
August 23

Denom Particle
(Syllabus: GS Paper 3 – Sci & Tech)

Researchers unveil 'demon particle' that can lead to making superconductors

Context: Researchers at the University of Illinois recently discovered a **demon particl**e that could lead to the making of superconductors that can operate at room temperature. This massless particle termed the holy **grail of superconductors, was discovered nearly 70 years** after 'demons' were first predicted.

About Demon Particle

- The theoretical **physicist David Pines, in 1956**, made the initial prediction of the **demon particle.**
- Pines' hypothesis suggested that distinct behaviors would be displayed by electrons moving through a solid, potentially resulting in the creation of a novel particle termed the "demon particle."
- These particles **possess no mass, carry no charge**, and are transparent to light.
- They have the capability to come together to form plasmons, which are collective electron entities exhibiting wave-like characteristics.
- **Plasmons play a crucial role in superconductivity**, and the identification of demon particles might pave the way for the design of new superconducting materials that can function at room temperature.

What is Superconductivity?

- **Definition:** Superconductivity is a phenomenon in which an electric charge travels through a substance without experiencing any resistance.
- **Efficient Energy Transfer**: The concept suggests that electrical energy can be transmitted between two locations with complete efficiency, without any loss of heat.
- **Discovery:** Dutch physicist Heike Kamerlingh Onnes first identified superconductivity in 1911.
- He noticed a sudden decrease in the electrical resistance of mercury when it was subjected to extremely low temperatures.
- **Temperature Dependence:** It is generally observed at extremely low temperatures, often near absolute zero (0 Kelvin or -273.15°C).

HT August 23

Black Eagle
(Syllabus: GS Paper 3 – Env & Eco)

Rare black eagle spotted at Chail wildlife sanctuary

Context: A rare black eagle has been spotted for the first time in the Chail wildlife sanctuary located in Himachal Pradesh's Solan district.

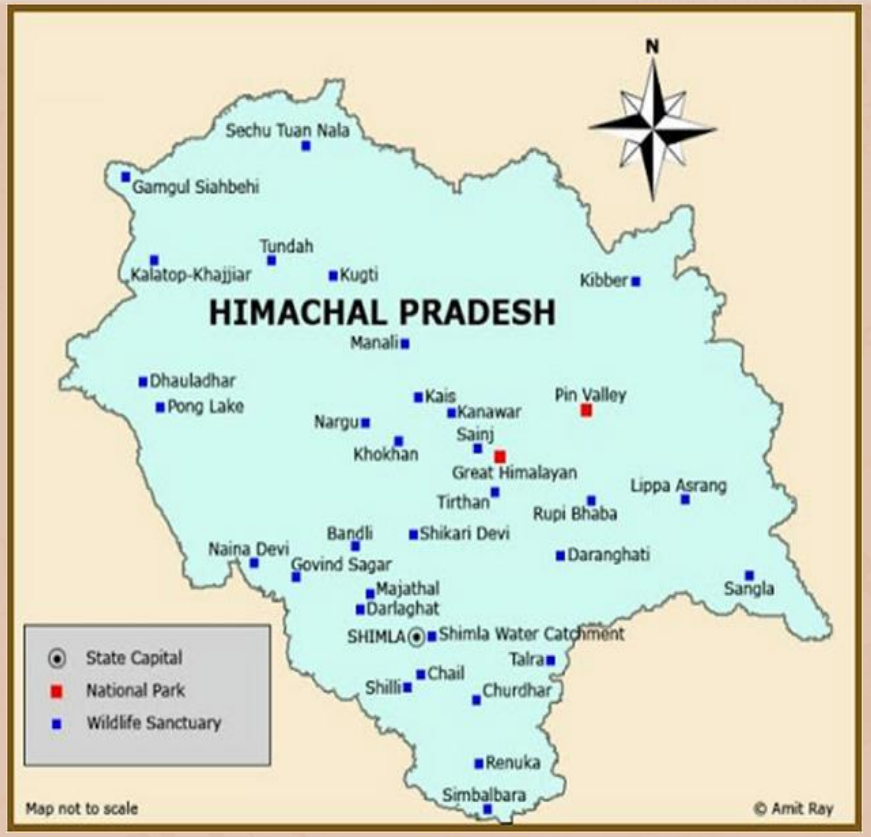
About Black Eagle

- **Belonging to the family Accipitridae,** it stands alone as the sole representative of the **genus Ictinaetus.**
- **Features:** They can grow **up to 81 cm**. It has a **grey-yellow beak** with a black tip and **yellow feet.**
- Gliding gracefully, they traverse the forests in the elevated terrains of **tropical and subtropical regions in South and Southeast Asia**, along with southeastern China.
- **Distribution:** They can be spotted in the Indian states of **Himachal Pradesh and Jammu & and Kashmir,** as well as within the forests of the Eastern and Western Ghats in peninsular India.
- **IUCN Status:** Least concern

About Chail Wildlife Sanctuary

Location: Chail, Himachal Pradesh.

- It forms a portion of the **watershed of a Giri River tributary**.
- **Flora:** Oak and Pine trees, as well as grasslands.
- **Fauna:** wild boar, goral, sambar, spotted deer, Himalayan black bear, common langur, Indian porcupine, flying squirrel, and more.



Respiratory Syncytial Virus
(Syllabus: GS Paper 2 – Science & Tech)

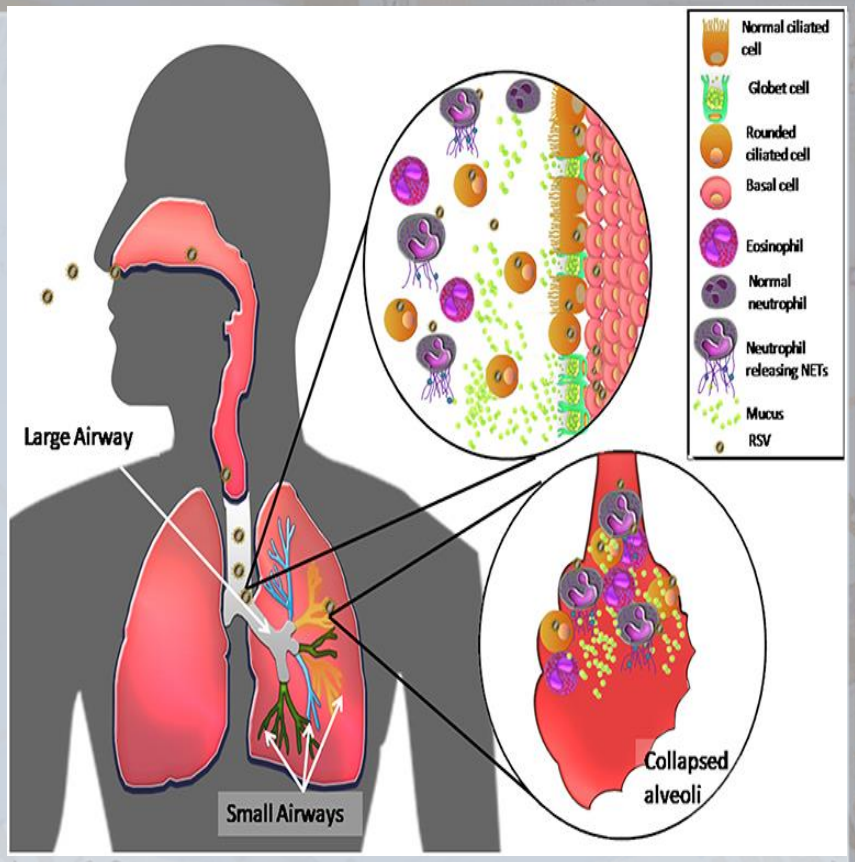
USFDA gives nod to first vaccine to protect newborns from Respiratory Syncytial Virus

Context: Recently, **The United States Food and Drug Administration (FDA) approved the first vaccination** to save newborns from **Respiratory Syncytial Virus.**

- The new vaccine is made by Pfizer and is given to mothers late in their pregnancies. It provides protection to infants through their first six months of life.

About Respiratory Syncytial Virus (RSV)

- RSV is a common respiratory virus.
- It is one of the most frequent **causes of childhood illness.**
- It usually causes **mild, cold-like symptoms,** such as **runny nose, cough, and fever**.
- However, premature infants, babies y**ounger than 6 months old**, people **over age 65**, and people with a compromised immune system, chronic lung disease, or congenital heart condition can get a more severe case of RSV.
- A severe infection can lead to **pneumonia and bronchiolitis.**
- **Transmission:** Spreads from person to person
- The air by coughing and sneezing, Direct contact, such as kissing the face of a child, touching an object or surface with the virus on it.
- **Symptoms:** Runny nose, Decrease in appetite, Cough, Sneezing, Fever & Wheezing.
- **ABRYSVO's approval** is a significant milestone because it is the first maternal vaccine that can protect newborns from RSV.



Bhartiya Nyaya Sanhita Bill 2023

(Syllabus: GS Paper 2 – Polity)

Context: The proposed **Bharatiya Nyaya Sanhita Bill (BNS)** says that causing "floods" is a terrorist offence.

- The Bill that seeks to replace the **British-era Indian Penal Code defines terrorism** as a separate offence for the first time as part of a general law. **The Unlawful Activities (Prevention) Act, of 1967** is a special law focused on terrorist activities.
- **Section 111 (6) (a)** of the Bill says that a "**terrorist" refers to any person** who "develops, manufactures, possesses, acquires, transports, supplies or uses weapons, explosives, or releases nuclear, radiological or other dangerous substance, or cause fire, floods or explosions."



Causing floods is a terrorist offence in law proposed to replace the Indian Penal Code

Vijaita Singh
NEW DELHI

The proposed Bharatiya Nyaya Sanhita Bill (BNS) says that causing "floods" is a terrorist offence.

The Bill that seeks to replace the British-era Indian Penal Code defines terrorism as a separate offence for the first time as part of a general law. The Unlawful Activities (Prevention) Act, 1967 is a special law focused on terrorist activities.

Section 111 (6) (a) of the Bill says that a "terrorist" refers to any person who

Those responsible for causing floods could be implicated under the proposed legislation. PHOTO FOR REPRESENTATION ONLY

The Bill that was introduced on the last day of the Monsoon Session of Parliament on August 11 has been referred to a Parliamentary

guards against false implication as available under the UAPA and the Maharashtra Control of Organised Crime Act (MCOCA).

been challenged in the Supreme Court.

'Safeguards missing'

"All safeguards have been bypassed in the new law. Now any police officer can register an FIR against anyone saying the person is a terrorist. These kinds of offences are not general offences, otherwise they would have been incorporated in the general law earlier," Mr. Khan said.

In 2022, Silchar in Assam was affected by a massive flood claiming more than 120 lives. Assam Chief Minister Himanta Biswa

led to a barrage of social media posts accusing the members of the community of waging "flood jihad".

Section 111 proposes a minimum five-year imprisonment and the death sentence as maximum punishment for a terrorist offence.

Mr. Khan said, "Under the MCOCA and the UAPA, there is a provision that before filing of FIR there has to be an approval by a senior police officer. Secondly, the investigation can only be carried out by an officer of a particular rank and there is a bar on the

About Bharatiya Nyaya Sanhita Bill (BNS)

- **The initial Law Commission, led by Thomas Babington Macaulay** in 1834, was responsible for drafting the Indian Penal Code. Its enforcement commenced in January 1860.
- This Bill will **replace the Indian Panel Code**.
- **Proposed Changes in Bill:** It suggests amendments to existing clauses, including defamation, crimes against women, and attempted suicide.
- The **Indian Penal Code comprises** 511 sections, while the Bharatiya Nyaya Sanhita Bill encompasses 356 provisions.
- This **Bill introduces a definition of the term "terrorism,"** marking the first instance of such a definition, unlike the IPC.

The Unlawful Activities (Prevention) Act, 1967 (UAPA)

- **Passed:** in 1967.
- **Aims:** To effective prevention of unlawful activities and associations in India.
- The Act grants complete **authority to the central government**.
- If the Centre perceives an activity as illegal, it can proclaim it as such through an Official Gazette.
- **UAPA Apply:** Both Indian and foreign nationals can be charged.
- **Meaning of Unlawful Activity:** It pertains to any action by an individual or group with the intent to undermine India's territorial integrity and sovereignty.

Real State Sector
(Syllabus: GS Paper 3 – Economy)

What the report of panel on stalled real estate projects has recommended

DAMINI NATH
NEW DELHI, AUGUST 22

OVER THE past decade or so, dreams of lakhs of homebuyers have been interrupted, with real estate developers running out of money and cases dragging on in courts. In March, the Union Housing and Urban Affairs Ministry set up a 14-member committee chaired by former NITI Aayog CEO and India's G20 Sherpa Amitabh Kant to suggest ways to address the problem of stalled real estate projects.

The committee, which included officials from the Union Finance Ministry, the Uttar Pradesh and Haryana governments, Insolvency and Bankruptcy Board of India, National Housing Bank and the Real Estate Regulatory Authority (RERA) of Haryana and UP, submitted its report to Housing and Urban Affairs Minister Hardeep Puri on August 21.

Committee's findings

The committee was told by Indian Banks' Association (IBA) chief executive Sunil Mehta that 60% of the legacy stalled projects had already been bought, with a capital commitment of Rs 1.9 lakh crore.

The committee's report said the IBA estimates that 4.12 lakh dwelling units worth Rs 4.08 lakh crore were "stressed", and about 2.40 lakh (44%) of these were in the National Capital Region. Another 21% of the units were in the Mumbai Metropolitan Region, it said.

The committee has concluded that the main reason for the stress in these projects was "lack of financial viability", which has led to delays and cost overruns. The way to solve the problem would be to improve the Internal Rate of Return of the projects in order to attract funding, it has said. Judicial interventions like the use of the Insolvency and Bankruptcy Code should be "the last resort".

In order to make the projects viable, all stakeholders — developers, financiers, land authorities, etc. — would have to take a "haircut" or accept less than what is due to them, it said.

EXPLAINED POLICY

Recommendations

The committee has said that the provisions of the Real Estate (Regulation and Development) Act, 2016, which mandate that all projects where the land is more than 500 sq m or the number of apartments to be built are more than eight should be registered with the state RERA, must be "enforced". Registration of the projects would lead to greater transparency, it has said.

The grant of registration or sublease by the land authorities to homebuyers should be delinked from the recovery of dues from developers, the committee has recommended. This would benefit about 1 lakh homebuyers, it has said.

Also, in many projects that were substantially complete, homebuyers were not being given no-objection and completion certificates due to "administrative hurdles". The committee recommended that the RERAs identify such projects and expedite the granting of certificates, irrespective of whether developers have paid their dues to the authorities.

One of the main recommendations is for states to set up a rehabilitation package to get the stalled projects running. Developers who sign up for it would have to commit to completing the projects in three years.

The committee gave the example of a model package for Noida and Greater Noida, including a "Zero Period" for two years starting with the onset of the Covid-19 pandemic in 2020, for which interest and penalties on developers would be waived. They would be allowed to get a "co-developer" on board to complete the work. The committee proposed a "partial surrender policy", in which developers can give back some of the unused land to the authority in exchange for a waiver on the dues for that land.

Implementation

Most of the recommendations fall within the purview of states. According to Ministry officials, the report has been sent to all states, who will decide on implementation. Noida and Greater Noida have already moved towards implementing the model package, having held meetings last week to discuss the recommendations.

The report said the Housing and Urban Affairs Ministry should prepare a detailed scheme for using the Special Window for Affordable and Mid-Income Housing (SWAMIH) Fund to "proactively" finance stalled projects and sent it to the Finance Ministry. It said the requirement of minimum Internal Rate of Return and first charge in the SWAMIH fund should be reworked. It also asked MoHUA to send a detailed proposal to the Finance Ministry on permitting banks to finance fresh housing loans for new buyers of the unsold inventory of stalled projects.

Context: A 14-member committee chaired by former **NITI Aayog CEO and India's G20 Sherpa Amitabh Kant**, was constituted to examine stalled real estate projects and recommend ways to complete them.

About the Committee

- **Establishment:** March 2023
- **Ministry:** Union Ministry of Housing and Urban Affairs

Recommendations of the Committee

- **Rehabilitation Package:** State administrations ought to formulate a rehabilitation package, while developers need to pledge a completion schedule spanning three years.
- **Zero Period:** Spanning from **April 1, 2020, to March 31, 2022**, would entail the suspension of interest and penalties owing to Covid-19 and court directives.
- **Mandatory RERA Registration:** The Real Estate (Regulation and Development) Act, 2016, provisions for registering projects with RERA must be enforced.
- **Resolution for Incomplete Projects:** RERAs need to identify primarily finished projects encountering administrative obstacles and offer a solution within a 30-day timeframe.

SWAHIM Fund

It has government backing and operates **as a Category-II AIF debt fund under SEBI** registration.

- **An Alternative Investment Fund (AIF)** denotes a privately pooled investment vehicle gathering funds from sophisticated investors, Indian or foreign, for purposeful investment based on a defined policy for investors' gain.
- **SBICAP Ventures, a wholly-owned subsidiary** of SBI Capital Markets and the State Bank of India, serves as the Fund's Investment Manager.
- The **Government aims to inject funds** totaling up to Rs. 10,000 crores into the affordable and middle-income group housing sector via the Special Window.

DTE

August 23

Kerala Towards Drought

(Syllabus: GS Paper 3 - Disaster)

After 4 years of high-intensity rains, Kerala inching towards drought with 45% deficit rainfall

Context: Kerala has received 45 percent less rain than normal this season, and increasing heat severely **affected power generation and drinking water** needs across the state. **Only 36 percent of water remains** in the reservoirs managed by the state electricity board.

Key Points

- **Palakkad:** The most water-scarce district in Kerala, facing critical drinking water shortage.
- **Bharathapuzha River:** In Shornur, Palakkad, Kerala's second-largest river, Bharathapuzha, has dwindled to a mere trickle.
- This situation has intensified the drinking water scarcity in Shornur and the neighboring Ottappalam.
- **Malampuzha:** Kerala's largest drinking water reservoir, there is a significant depletion of 58 percent.
- At present, Peppara Dam can provide drinking water for only the next 100 days.
- **Idukki:** Kerala's biggest hydroelectric power project, has received 60% less rain this season. This could affect power generation at the Idukki hydroelectric station.
- Climate experts opined that this month is becoming one of the most rain-starved Augusts on record due to a looming El Nino.

About El Nino

- This phenomenon involves the periodic warming of seawater in the central-east Equatorial Pacific, occurring at irregular intervals.
- **El Niño Effects:** During El Niño events, temperatures on the surface of the Pacific Ocean along the equator increase, leading to a weakening of trade winds.
- **Wind Shift:** The typical easterly trade winds that flow from the Americas towards Asia are disrupted during El Niño.

IE August 23

CRISPR Cas9
(Syllabus: GS Paper 3 – Science & Tech)

Gene-edited mustard: Less pungent, more useful

Context: Indian scientists have developed the first-ever low-pungent mustard that is pest and disease-resistant. It is based on **CRISPR/Cas9 gene** editing while being **non-GM and transgene-free**.
Oilseeds yield not only oil for cooking and frying. Their so-called meal – the residual cake after extraction of oil from the seeds – is a protein-rich ingredient used in livestock, poultry and aqua feed.
India is the 4th largest oilseeds producer in the world. It has 20.8% of the total area under cultivation globally, accounting for 10% of global production.

CRISPR Cas9 Technology
CRISPR is an acronym representing Clustered Regularly Interspaced Short Palindromic Repeats.
- It is an innovative technology that provides geneticists and medical researchers with the capability to alter precise segments of the genome.
- **CRISPRs are unique segments of DNA** with specialized functions.
- The protein Cas9, also known as "CRISPR-associated," functions as an enzyme resembling molecular scissors, proficient in cleaving DNA strands.
- **This capability enables researchers to conveniently** modify DNA sequences and manipulate gene behaviour.

Genetically Modified (GM) Crops
- **GM crops encompass the introduction of external genes** into an organism's genetic makeup, resulting in transgenic plants.

These genes can **originate from species** unrelated to the host organism.

Genome-edited (GE) Crops
- **GE crops involve the alteration of preexisting genes** within an organism's genome, usually without the incorporation of foreign genes.

These **modifications emulate** naturally occurring mutations.

PIB August 23

PM-DevINE
(Syllabus: GS Paper 2 - Governance)

Prime Minister's Development Initiative for North Eastern Region (PM-DevINE)-issue of revised guidelines

Context: The **Prime Minister's Development Initiative for North Eastern Region (PM-DevINE**), which was launched to boost the development of North-East India, has recently been revised to better reflect the region's needs and aspirations.

- The Ministry of Development of the **North Eastern Region (MDoNER**) has issued fresh Scheme Guidelines for the execution of the Cabinet-endorsed North East Special Infrastructure Development Scheme (NESIDS) throughout the balance period of the 15th Finance Commission (2022-2026).

About PM-DevINE

- This initiative, operating as a **Central Sector Scheme**, was introduced under the framework of the Union Budget for the fiscal year 2022-23.
- **Implemented By:** Ministry of Development of the Northeast Region.
- It has been allocated **full 100% funding from the Central government**, ensuring direct allocation of resources for development endeavours.
- **Time Constraints:** Efforts will be made to complete the PM-DevINE projects by 2025-26.

PM-DevINE Target

- The creation of infrastructure,
- Support industries,
- Social development projects and
- Create livelihood activities for the youth and women, with a focus on job creation.
- These projects will include basic infrastructure in all primary healthcare centres and government schools.

TOI

August 23

Ultra-Processed Food

(Syllabus: GS Paper 2 – Health)

Context: There has been a rapid rise in the sales of **ultra-processed foods** in India in the last 10 years, shows a report released by the **World Health Organisation (WHO)** in collaboration with the Indian Council for Research on International Economic Relations (ICRIER).

- **By 2032, despite a decline in market share**, chocolate and sugar confectioneries will continue to dominate ultra-processed food followed by salty snacks and ready-made and convenience food, according to the report.

About World Health Organization (WHO)

- **WHO takes the lead in worldwide health concerns**, influencing the health research direction, establishing norms and benchmarks, formulating policy recommendations based on evidence, offering technical assistance to nations, and tracking and evaluating health trends.
- **Agency:** United Nations Specialized Agency for Health
- **Founded:** in 1948.
- **Headquarters:** Geneva, Switzerland
- **Objective:** To serve as the overseeing and harmonizing entity for global health initiatives.

Ultra-processed foods are made mostly from substances extracted from foods, such as fats, starches, added sugars, and hydrogenated fats. Ex: Ice cream, biscuits, carbonated drinks etc.



As sales of junk food soar, WHO study warns of 'obesity epidemic'

DurgeshNandan.Jha
@timesgroup.com

Getty Images/iStockphoto

Consumption dropped during the pandemic but shot up again later

New Delhi: There has been a rapid rise in the sales of ultra-processed foods in India in the last 10 years, shows a report released by the World Health Organisation (WHO) in collaboration with the Indian Council for Research on International Economic Relations (ICRIER).

The trend dipped slightly during the Covid-19 pandemic in India. However, analysis suggests that post-pandemic there has been a sharp 'V-shaped' recovery in the sales of such food items.

For example, the retail sales value of chocolate and sugar confectioneries, which sto-

Similarly, retail sales value of salty snacks and beverages reduced from 14% each in 2019 to 9% and 1% in 2021 respectively. The researchers said salty snacks are estimated to have the highest projected growth rate, followed by breakfast cereals and beverages in the next 10 years.

By 2032, despite a decline in convenience food, according to the report. "Even if consumption is low compared to home-cooked foods, the upward trend needs to be curtailed with policy interventions to prevent an obesity epidemic in India, which is evident in western countries," analysts said.

Unlike processed food that mostly contains salt, sugar and fat for longer shelf-life, ultra-processed foods also include artificial colours and flavours, and artificial sweeteners. "The consumption of ready-to-eat meals, sugary drinks have become common. Its health impact is also increasingly visible as we are seeing a rapid rise in persons suffering from fatty liver and intestinal disea-

Secure Top Rank with theIAShub Courses

Prelims 2023 Courses

01 Prelims Crash Course Score Enhancement Program (SEP)

02 INA Current Affairs (Prelims)

03 TACKLE - Prelims Test Series

04 Geography - Prelims Crash Course

Quality Enrichment Courses (Mains 2023)

01 Quality Enrichment Program (QEP)

02 Science of Answer Writing (SAW)

Prelim Cum Mains 2024 Courses

01 NEEV GS Foundation 2024/25

02 INA Current Affairs Pre Cum Mains - 2024

FREE Download PDF

Login to theiashub.com

- Aaj Ka Quality Enrichment (Toppers' Favourite PDF)
- News-CRUX-10 (10 News. 10 Sources. One Place)
- Monthly Editorials (The Hindu & Indian Express)
- Daily Quiz (Prelims)
- Government Schemes & Ministry Wise Year End Review
- Free Enrichment PDFs (Tailor Made Crisp Study Material)



Log On To Our Unique
Free Answer Writing Sessions with Toppers (FAST) Portal
& Start Practicing!

SCAN HERE

9560082909

t.me/theiashub

/mkyadav

www.theiashub.com

www.theiashub.com