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STATE OF THE WORLD'S CHILDREN 2024 (SOWC-2024) REPORT

In News

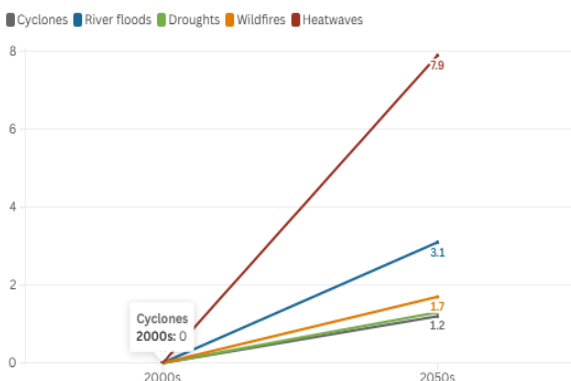UNICEF recently released The State of the World's Children (SOWC) report .

About report

- It was first published in 1980, has significantly contributed to global child welfare
  - Each SOWC report examines critical issues impacting children, such as disabilities, conflict, child labour, urbanization, and early childhood development.
- It provides a comprehensive analysis of global trends affecting children.
- The latest flagship report examines three major global forces impacting children's lives — **population shifts, the climate crisis and disruptive technologies** .

Key findings

- **Climate and Environmental Hazards:** Nearly 1 billion children live in countries facing high climate and environmental risks.
  - Children are particularly vulnerable to pollution, extreme weather, rising temperatures, and diseases (e.g., malaria, dengue, and Zika).
  - Climate change impacts include contaminated water supplies, food insecurity, and mental health issues like trauma and anxiety.
- **Projections for 2050s:** Global newborn survival rates expected to rise to over 98%.
  - The probability of surviving to age 5 increases to 99.5%.
  - Life expectancy increases, with girls expected to live to 81 years and boys to 76 years.

Increase in the number of children exposed to extreme climate hazards
From 2000s to 2050
expressed as multiples of the 2000s

■ Cyclones ■ River floods ■ Droughts ■ Wildfires ■ Heatwaves

Cyclones 2000s: 0

Source: The State of the World's Children 2024   THE HINDU

- **Impact of Extreme Weather:** 400 million students have faced school closures due to extreme weather since 2022, disrupting learning and economic growth.
  - Climate and environmental hazards are also leading to the displacement of children from their homes.
- **Global Child Population Trends:** By the 2050s, the global child population is projected to stabilize at around 2.3 billion.
  - Significant increases in child populations in South Asia, Eastern and Southern Africa, and West and Central Africa, regions facing climate risks and limited digital infrastructure.
- **Technological Advancements:** Artificial intelligence, neurotechnology, renewable energy, and vaccine breakthroughs could improve childhoods.
  - Digitalization can empower children but also exposes them to online risks, including sexual exploitation.
- **Socio-Economic Conditions:** 23% of the world's children will live in low-income countries by the 2050s, more than double the proportion in the 2000s.
  - GDP per capita is projected to more than double in East Asia, the Pacific, and South Asia by the 2050s.
- **Urbanization:** By the 2050s, nearly 60% of children will live in urban settings, up from 44% in the 2000s.
  - Ensuring healthier and secure urban areas is crucial for future generations.
- **Digital Divide:** Over 95% of people in high-income countries have internet access, compared to only 26% in low-income countries.
  - This digital exclusion exacerbates existing inequalities, especially in regions with rapidly growing child populations.

Recommendations

- UNICEF emphasizes that decisions made by world leaders today will shape the future children inherit.
- The report stresses that child rights must remain central to all strategies, policies, and actions to meet future challenges and ensure continued progress.
- There is a need to

- Increase investment in education, health, and sustainable urban development.
- Strengthen climate resilience in infrastructure and essential services.
- Ensure connectivity and the safe use of technology for all children.

Source:TH

INDIA - CARICOM SUMMIT

Context
- Prime Minister Narendra Modi **proposed seven key pillars** to strengthen ties between India and 'CARICOM' (Caribbean Community).

About
- The PM joined the Caribbean partner countries for the **second India-CARICOM Summit in Guyana.**
- PM visit to Guyana is the **first visit** by an Indian head of State in **more than 50 years.**
- He held talks with the Caribbean partner countries, focusing on areas such as **trade, technology, and tourism, among others.**

7 Key Pillars

The seven pillars listed by PM Modi also form the acronym **C-A-R-I-C-O-M.**

- **Capacity Building:** Announced 1,000 information technology scholarships and proposed expanding the technology centre India is establishing in Belize to CARICOM members.
- **Agriculture and Food Security:** India can share its advancements in agricultural technology, such as deploying drones, and promote millet cultivation to enhance nutrition.
- **Renewable Energy and Climate Change:** Invited CARICOM nations to join initiatives such as International Solar Alliance, Coalition for Disaster Resilient Infrastructure, Mission Life for Sustainable Lifestyles, and the Global Biofuel Alliance.
- **Innovation and Technology:** India's technological advancements, such as the "Stack" infrastructure and the Universal Payment Interface (UPI) for digital payments, can be extended to CARICOM countries.
- **Cricket and Culture:** Proposed using cricket as a tool for women's empowerment by offering 11 scholarships to each CARICOM nation for women's cricket coaching.

- **Ocean Economy:** India can assist in developing untapped marine resources, enhancing regional connectivity, and supporting security initiatives.
- **Medicine and Healthcare:** Offers affordable solutions through its Janaushadi scheme.

CARICOM
- **Established:** It was formed in **1973** with the signing of the **Treaty of Chaguaramas.**
  - It is the **oldest surviving integration movemen**t in the developing world.
  - The Treaty was later revised in 2002 to allow for the eventual establishment of a single market and a single economy.
- **Members:** Caricom is a grouping of **21 countries** including 15 member states and six associate members.
  - From the Bahamas in the north to Suriname and Guyana in South America, CARICOM comprises states that are **considered developing countries.**

- **Demography:** It is home to approximately sixteen million citizens, 60 percent of whom are under the age of 30.
  - They belong to the main ethnic groups of Indigenous Peoples, Africans, Indians, Europeans, Chinese, Portuguese and Javanese.
- **Objectives Of CARICOM:** The four pillars of CARICOM are economic integration, foreign policy coordination, human and social development, and security.

- **Caribbean Community:** The Caribbean economic development spans from a political union which led to the establishment of the West Indies Federation (1958), to a more structured engagements of the Caribbean Free Trade Association (CARIFTA) (1965), and a more sustained measure of regional integration through a Caribbean Community (1973).

- **Summits:** CARICOM and the Prime Minister last met in 2019 on the margins of the 74th Session of the United Nations General Assembly (UNGA).

  ◆ India proposed to hold the 3rd Summit in India.

Why is CARICOM Important To India's Global South Objective?

- **Enhancing Ties with Developing Nations:** For India, building stronger ties with CARICOM aligns with its broader strategic objective of enhancing partnerships with developing countries.

- **Additional Global Platform for India:** The Caribbean nations, many of which are also Commonwealth members, provide India with additional platforms for cooperation in international forums, particularly on issues of mutual interest such as trade, climate change, and disaster management.

- **Common Concerns:** India and CARICOM have common concerns about the effects of climate change.

  ◆ Rising sea levels, extreme weather events, and environmental degradation pose existential threats to many Caribbean nations, making climate action a priority in their foreign policy agendas.

- **Indian Diaspora:** The Indian diaspora in CARICOM countries plays a pivotal role in maintaining people-to-people ties between the two regions.

Global South

- The Global South refers to various countries around the world that are sometimes described as 'developing', 'less developed' or 'underdeveloped'.

  ◆ It includes countries in Asia, Africa and South America.

  ◆ Many of these countries are in the Southern Hemisphere, largely in Africa, Asia and Latin America.

  ◆ They are poorer, have higher levels of income inequality and suffer lower life expectancy and harsher living conditions.

- **Global North** refers loosely to countries like the US, Canada, Europe, Russia, Australia and New Zealand.

Conclusion

- As CARICOM nations look beyond their traditional alliances with North America and Europe, **India emerges as a valuable partner** for their pursuit of economic diversity and sustainable development.

- India is engaging with CARICOM for enhancing its relationship with developing countries along with becoming the **voice of Global South.**

  ◆ Throughout its **G20 presidency,** India emphasized the concerns of the Global South in discussions to find solutions to the most pressing issues in the maritime domain.

- India acknowledges that countries need collective solutions to their common problems, especially since they remain economically interdependent.

Source: TH

PRIME MINISTER MODI'S VISIT TO GUYANA

Context

- Prime Minister Narendra Modi became the first Indian head of state to visit Guyana in over **56 years,** marking a historic milestone in India-Guyana relations.

Key Highlights

- The President of the Co-operative Republic of Guyana conferred upon PM Modi the highest national award of Guyana, **"The Order of Excellence".**

- India and Guyana **signed 10 MoUs**, covering areas such as hydrocarbons, digital payment systems, pharmaceuticals, and defense cooperation.

Key MoU signed between India and Guyana

- MoU on Cooperation in the **Hydrocarbons Sector** and MoU for Bilateral Cooperation in the **field of Agriculture and Allied Sectors,**

- MoU for Recognition of **Indian Pharmacopoeia,**

- MoU for **Supply of medicines to Public Procurement Agencies of CARICOM countries** at affordable prices under the Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP),

- **INDIA STACK MoU** on Cooperation in the field of sharing successful digital solutions implemented at population scale for digital transformation,
- MoU between NPCI International Payments Ltd and Ministry of Foreign Affairs, Guyana for enabling **deployment of UPI like system in Guyana,**
- MoU on Cooperation and collaboration in field of Broadcasting between **Prasar Bharti and National Communications Network, Guyana,**
- MoU between NDI (National Defence Institute, Guyana) & RRU (Rashtriya Raksha University, Gujarat).

Guyana-India Bilateral Relations

- **Establishment of Diplomatic Missions:** The Indian Commission was established in Georgetown, Guyana in May **1965,** marking the beginning of formal diplomatic relations.
  - The mission was upgraded to a **High Commission in 1968.**
- **Cultural Diplomacy:** The **Swami Vivekananda Cultural Centre** was set up in **1972** to foster cultural exchange and enhance mutual understanding between the peoples of India and Guyana.
- **Development Cooperation:** India's engagement in development assistance to Guyana has been significant, particularly under the **Indian Technical & Economic Cooperation (ITEC) program.**
- **Infrastructure Support:** India has supported critical infrastructure projects in Guyana, such as; National Cricket Stadium, Solar Traffic Lights, **Centre of Excellence in Information Technology (CEIT)** etc.

Challenges

- **Geopolitical Competition:** Guyana's strategic importance in the oil and gas sector has attracted global powers, especially given the influence of countries like China and the US.
- **Infrastructure Deficit:** Limited infrastructure in Guyana poses logistical and operational challenges for the rapid expansion of trade and investment.
- **Vulnerability to Climate Change:** Guyana, as a low-lying coastal state, is particularly vulnerable to rising sea levels and extreme weather, potentially impacting developmental cooperation projects.

Way Ahead

- **Deepening Energy Collaboration:** India should establish long-term agreements for oil imports and explore joint ventures in **Guyana's hydrocarbon sector.**
- **Enhancing Regional Outreach:** Strengthening Guyana's role as a gateway for India's engagement with **CARICOM countries** can help India expand its influence in Latin America and the Caribbean.
- **Institutional Partnerships:** Enhancing collaboration in education, health, and digital governance will foster sustainable and inclusive growth in Guyana while showcasing India as a reliable partner.

Guyana

- **Location:** Guyana, is located in the northeastern corner of South America.
- **Bordering Nations:** Guyana is bordered by the **Atlantic Ocean** to the north, by **Suriname** (along the Courantyne River) to the east, by **Brazil** to the south and southwest, and by **Venezuela** to the west.
- **Major rivers:** Courantyne, Berbice, Demerara, and Essequibo.
- **Oil reserves:** Guyana has gained significant salience in the oil & gas sector with the new discoveries of **11.2 billion barrels** of oil equivalent, amounts to **18%** of total global Oil & Gas discoveries.

Source: PIB

ROLE OF URBANIZATION IN BOOSTING SKILLS AND EMPLOYMENT

Context

- Urbanization presents opportunities for skill development and employment creation, particularly in a rapidly urbanizing country like India.

Status of Urbanisation in India

- India is witnessing rapid urbanization. Every minute, 30 people migrate from rural to urban India

- According to the **2011 Census**, India's urban population increased from 27.7% in 2001 to **31.1% in 2011**, at a rate of 2.76% per year.

- India is rapidly urbanizing and is estimated to host **50 percent** of its population in cities by **2050.**

- India has **6 mega cities** (population over **10 million**) as per the 2011 Census: Delhi, Mumbai, Kolkata, Bengaluru, Chennai, and Hyderabad.

Opportunities of Urbanisation

- **Diverse Employment Options:** Urban areas host various industries, including manufacturing, IT, retail, and services, creating jobs across skill levels.

- **Skill Enhancement Ecosystem:** Urban centers serve as hubs for education and training institutes, fostering access to skill development programs.

- **Support for Entrepreneurship:** Cities offer infrastructure, financial services, and market access that nurture entrepreneurial ventures.

- **Technology-driven Growth:** With rapid technological advancements, urban centers are pivotal for digital skilling, fostering job creation in IT, AI, and e-commerce sectors.

What are the Challenges?

- **Unplanned Urbanization:** The lack of adequate planning results in inadequate infrastructure and slum proliferation.

  - **According to Census 2011, approximately 24%** of urban households live in slums, reflecting challenges in housing and urban infrastructure.

- **Mismatch of Skills:** Many workers migrating to cities lack the technical or soft skills required for urban jobs, resulting in underemployment.

- **Pressure on Resources:** Overcrowding in cities strains housing, healthcare, and public utilities, impacting the quality of life and worker productivity.

  - According to **NFHS-5, 2019-21**, over **40%** of the urban population lacks access to adequate sanitation facilities.

- **Vulnerability in Informal Jobs:** Workers in informal sectors face low wages, job insecurity, and lack of social security benefits.

- **Gender Disparities:** Women face barriers to skill development and employment due to safety concerns, limited mobility, and societal norms.

- **Environmental Stress:** According to a report by TERI, Urban centers contribute nearly **75%** of India's total **greenhouse gas emissions.**

Government initiatives

- **Skill India Mission:** Focused on creating a skilled workforce through programs like **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**

- **Smart Cities Mission:** Aims to develop **100 smart cities** with efficient infrastructure and governance.

- **AMRUT (Atal Mission for Rejuvenation and Urban Transformation):** Improving urban infrastructure to support economic activities and better living standards.

- **Startup India Initiative:** Fostering innovation and entrepreneurship by providing financial and regulatory support.

- **DAY-NULM (Deendayal Antyodaya Yojana - National Urban Livelihoods Mission):** Enhancing the employment and skill levels of the urban poor.

- **Digital India Program:** Promoting digital literacy and e-governance to support technology-driven employment.

Suggestions

- **Integrated Urban Planning:** Develop well-planned urban centers with a focus on affordable housing, public transport, and access to training institutes.

- **Public-Private Partnerships:** Leverage private sector expertise in skill development and employment generation initiatives.

- **Future-ready Skills:** Emphasize digital, green, and soft skills to align with emerging industries and technologies.

- **Support for Informal Sector:** Introduce policies to formalize and enhance the working conditions of informal sector employees.

- **Empowering Women:** Ensure women's participation in urban job markets through safe and inclusive workspaces and focused training programs.

Concluding remark

- Urbanization, if managed strategically, can serve as a catalyst for enhancing skills and employment opportunities, paving the way for sustained economic growth and inclusive development in India.

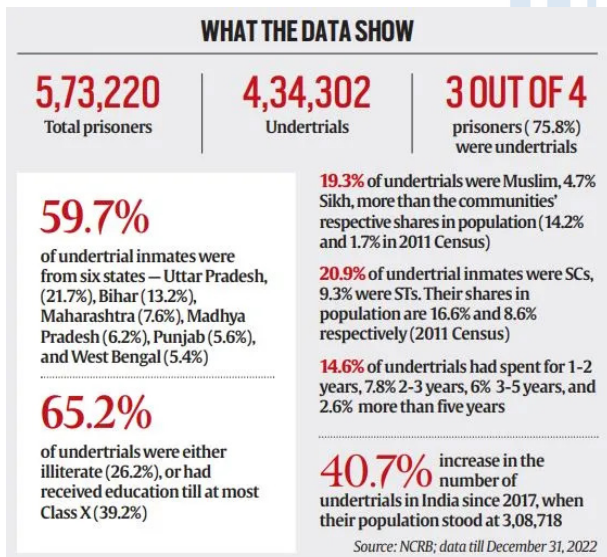**Source: IE**

INDIA'S UNDERTRIAL PRISONERS

Context

- Recently, the Union Home Minister said that undertrials who have spent more than a third of the maximum prescribed sentence for the crime they are accused of committing should be released before Constitution Day (November 26).

Undertrial Prisoners in India

- Undertrial prisoners are those who are in judicial custody while awaiting trial. Despite being presumed innocent until proven guilty, many of these individuals spend years in prison due to prolonged legal procedures and their inability to afford bail.

- **Section 479 of the Bharatiya Nagarik Suraksha Sanhita (BNSS):** It allows for the release of first-time offenders who have served one-third of their maximum sentence and other undertrials who have served half of their maximum sentence.

  - This same standard was provided under the previously applicable Section 436A of the Code of Criminal Procedure, 1973 (CrPC).

Current State of Undertrial Prisoners

Overcrowding:

WHAT THE DATA SHOW

5,73,220 Total prisoners | **4,34,302** Undertrials | **3 OUT OF 4** prisoners (75.8%) were undertrials

59.7% of undertrial inmates were from six states — Uttar Pradesh, (21.7%), Bihar (13.2%), Maharashtra (7.6%), Madhya Pradesh (6.2%), Punjab (5.6%), and West Bengal (5.4%)

65.2% of undertrials were either illiterate (26.2%), or had received education till at most Class X (39.2%)

19.3% of undertrials were Muslim, 4.7% Sikh, more than the communities' respective shares in population (14.2% and 1.7% in 2011 Census)

20.9% of undertrial inmates were SCs, 9.3% were STs. Their shares in population are 16.6% and 8.6% respectively (2011 Census)

14.6% of undertrials had spent for 1-2 years, 7.8% 2-3 years, 6% 3-5 years, and 2.6% more than five years

40.7% increase in the number of undertrials in India since 2017, when their population stood at 3,08,718

Source: NCRB; data till December 31, 2022

- According to the **NCRB's report Prison Statistics India 2022**, Indian prisons had an **occupancy rate of 131%**, with 5,73,220 inmates against a capacity of 4,36,266.

- 4,34,302 are undertrials against whom **cases are still pending**, amounting to nearly **75.8% of all prisoners in India.**

- As of December 31, 2022, around **8.6% of all undertrial prisoners** had been in prison for **more than three years.**

- It leads to inhumane living conditions, inadequate medical care, and increased risk of violence and disease and hampers the rehabilitation and reformation processes.

Prolonged Detention:

- Many undertrial prisoners remain in jail for periods exceeding the maximum sentence for their alleged offences.

- It is often due to delays in the judicial process, lack of legal representation, and administrative inefficiencies.

Impact on Vulnerable Groups:

- Women, juveniles, and individuals from marginalised communities are disproportionately affected.

- Women undertrials, especially those with young children, face additional hardships due to inadequate facilities and support systems.

Reforms Related To India's Undertrial Prisoner System

- **Supreme Court Directives:** Recently, the Supreme court directed jail authorities to identify and release eligible undertrials who have served a significant portion of their maximum sentence under **Section 479 of the BNSS.**

- **Special Drives:** The court has mandated special drives to identify eligible undertrials, including women and those with young children, to expedite their release.

  - It aims to ensure that no eligible prisoner remains incarcerated due to administrative delays.

- **Fast-Track Courts:** To address the backlog of cases, the government has proposed the establishment of fast-track courts. These courts will focus on expediting trials for petty offences and cases pending for extended periods

  - It is expected to reduce the number of undertrials and alleviate prison overcrowding.

- **Legal Aid and Representation:** Enhancing access to legal aid and representation is crucial. The **National Legal Services Authority (NALSA)** and other organisations are working to provide free legal services to undertrials, ensuring they receive timely and fair trials.

- **Policy Reforms:** The government is considering broader policy reforms to address the root causes of prolonged detention that includes

revising bail laws, improving prison management, and ensuring better coordination between the judiciary and prison authorities.

- **Bail Law Reforms:** The Supreme Court has highlighted the need for comprehensive bail law reforms. In the case of Satender Kumar Antil vs CBI, the Court provided guidelines for timely disposal of bail applications and emphasised the principle of 'bail not jail'.

  - However, effective implementation requires a deeper understanding of the socio-economic barriers that prevent undertrials from securing bail.

- **Judicial and Administrative Efficiency:** Addressing the backlog of cases through judicial reforms is essential. Increasing the number of judges and improving court infrastructure can help expedite trials and reduce the duration of pretrial detention.

  - Additionally, implementing guidelines to prevent arbitrary arrests can minimise unnecessary detentions.

Conclusion

- The state of undertrial prisoners in India highlights significant flaws in the criminal justice system. However, recent initiatives and directives from the Supreme Court offer hope for meaningful change.

- By implementing these measures, India can ensure that justice is not delayed and that the rights of undertrial prisoners are upheld.

Source: IE

DISPARITIES IN THE QUALITY OF PACKAGED FOOD

Context

- A report by Access to Nutrition Initiative (ATNi) a non-profit global foundation, found **disparities in the quality of packaged food** in low-and-middle income countries (LMICs) compared to high-income countries (HICs).

About the Report:

- The report assessed 30 of the world's largest Food & Beverage (F&B) manufacturers, which represent 23% of the global F&B market.

- **Brands Analyzed**: It analyzed products from major brands like Nestlé, PepsiCo, Unilever, Coca-Cola, and Hershey.

- **Method**: The report used a health star rating system to evaluate the healthiness of food products.

Health Star Rating System

- Under this system products are ranked **out of 5 on their healthiness.**

- **5 is the best**, and a score above 3.5 is considered to be a healthier choice.

- The system assesses components of food considered to increase risk and offsets these against components considered to decrease risk to calculate a final score that is converted to a star rating.

Major Findings

- **Portfolio Healthiness:** It was found to be **lowest in LMICs,** highlighting disparities in products offered across different markets.

- **Affordability:** Only 30% of companies have demonstrated a strategy to price some of their 'healthier' products affordably for lower income consumers.

Global Health and India Context:

- **High Burden of NCDs: In India**, NCDs (Non-Communicable Diseases) like diabetes and obesity are rising due to unhealthy diets, contributing to a large disease burden.An estimated 10.13 crore Indians have diabetes, and as per National Family Health Survey 5, obesity stands at 24% among women and 23% among men.

  - The Economic Survey of India 2023-24 noted 56.4% of India's disease burden is linked to unhealthy diets.

- **Affordability and Diet Changes: As per UN data** over 50% of Indians cannot afford a healthy diet.

- **Malnutrition:** Undernutrition, anaemia and micronutrient deficiencies continue to remain pressing problems in India.

Do you know ?

- The **Indian food and beverage packaging industry** is experiencing significant growth, projected to reach $86 billion by 2029, with an annual growth rate of 14.8%.

- This sector includes a wide range of packaging products like containers, cups, tableware, straws, bags, wraps, and boxes, all designed to protect and preserve food.

Food Labelling in India:

- India has yet to make significant progress on front-of-pack food labelling to indicate unhealthy levels of sugar, fat, and sodium.

- While India has signed international resolutions on food marketing and labelling (e.g., WHO's guidelines on marketing unhealthy food to children), regulations on food labelling have stalled.

Other related initiatives

- **FSSAI (Food Safety and Standards Authority of India):**
  - It is the central authority responsible for regulating food safety standards.
  - It sets standards for food quality, hygiene, and packaging.
  - It also oversees food business licensing and registration.
  - Food businesses must register or obtain an FSSAI license based on their scale of operations (e.g., manufacturers, retailers, importers).

- **Food Safety and Standards Act, 2006:**
  - This law provides the framework for food safety and regulates manufacturing, storage, sale, and import of food products.
  - It mandates food businesses to obtain a license or registration.

- **Penalties for Non-Compliance:** Non-compliance with food safety regulations can result in penalties, fines, suspension, or cancellation of licenses.

- **Consumer Protection:** The regulations include provisions for consumer safety, such as the requirement for clear food labeling and the ability to recall unsafe food products.

Codex Alimentarius Commission (CAC)

- It is an **intergovernmental food standards body**, set up in **1963**. The term "Codex Alimentarius" is Latin for "**Food Code.**"

- It was established jointly by the **UN's Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO)**, within the framework of the Joint Food Standards Programme.

- **Objective:** To protect consumer's health and ensure fair practices in the food trade.

- **Members:** Currently, 189 members (188 UN member countries and the European Union).

- The Commission meets in regular session once a year alternating between Geneva and Rome.

- India became a member in **1964.**

Challenges of Food Safety in India

- **Lack of Testing Facilities:** There is a shortage of adequately equipped food testing laboratories, limiting the ability to monitor food quality and safety across the country.

- **Lack of Consumer Awareness:** A significant portion of the population is not fully aware of food safety standards, labeling requirements, or their rights to safe food, resulting in poor consumer vigilance.

- **Weak Monitoring and Inspections:** Inadequate resources for regular inspections and enforcement, result in low compliance with food safety regulations.

- **Street Food and Small Vendors:** A large proportion of food is sold by unregistered vendors who do not follow food safety standards, often because of lack of awareness, resources, or regulatory oversight.

- **Non-licensed Food Producers:** Many small-scale food producers and vendors operate without the necessary licenses, bypassing regulatory controls.

- **False Claims on Labels:** Misleading claims about health benefits and organic certifications on food labels are common, making it hard for consumers to make informed decisions.

Suggestive Measures

- **Front of Package Labelling:** It would indicate high sugar, fat and sodium content, in Chile and Mexico for instance, the consumption of sugary beverages decreased after such mandatory labelling.

- **Public Awareness Campaigns:** Launch national and regional campaigns to educate consumers about food safety standards, labeling, and foodborne illness prevention.

- **Regular Review of Standards:** Regularly update and review food safety standards to keep pace with technological advancements and international best practices.

- **Global Harmonization:** Align India's food safety regulations with international standards (e.g., Codex Alimentarius) to ensure that Indian food products can compete globally while ensuring consumer safety.

Source: TH

FACTS IN NEWS

CLOUD SEEDING

In News

The Delhi government has proposed cloud-seeding or artificial rainfall as an emergency measure to combat record pollution levels.

About Cloud-seeding

- It is a weather modification technique used to induce artificial rainfall by introducing chemical "nuclei" like silver iodide, potassium iodide, dry ice, or liquid propane into pre-existing clouds.
- These chemicals help moisture in the air condense, accelerating rainfall.
- Types of Cloud-Seeding:
    - Hygroscopic: Uses salt particles to accelerate droplet formation in liquid clouds.
    - Glaciogenic: Uses silver iodide or dry ice to induce ice formation in supercooled clouds.
- **Implementation:** India: Attempted in Karnataka, Andhra Pradesh, and Maharashtra for drought relief.
    - **Global**: Used in Australia, America, Spain, France, UAE, and Russia.
- **Effectiveness:** Effectiveness and environmental impact are debated, with experts citing the need for more research.
    - Pune-based Indian Institute of Tropical Meteorology reported a 60-70% success rate in inducing rain.
    - But there are concerns about the environmental impact of silver iodide.
    - Therefore cloud seeding has seen varying degrees of success and requires specific atmospheric conditions to be effective.

Source:IE

INDIA'S FIRST INDIGENOUS ANTIBIOTIC, NAFITHROMYCIN

In News

India has launched Nafithromycin, the country's first indigenously developed antibiotic targeting antimicrobial resistance (AMR).

About Nafithromycin

- **Development**: It is Developed with support from the Biotechnology Industry Research Assistance Council (BIRAC) and brought to market by Wockhardt under the name Miqnaf.
    - The development of Nafithromycin took 14 years of research and an investment of 500 crore, with clinical trials conducted in the U.S., Europe, and India.
- It is designed to treat **Community-Acquired Bacterial Pneumonia (CABP)** caused by drug-resistant bacteria, particularly affecting vulnerable groups like children, the elderly, and immune-compromised patients.
- **Effectiveness :** The antibiotic is ten times more effective than azithromycin, with a three-day treatment regimen that is safer, faster, and better tolerated by patients.
    - It has minimal side effects and no significant drug interactions, making it a versatile solution.
- **Importance :** Nafithromycin is the first new antibiotic in its class to be developed globally in over 30 years and is poised to tackle the global AMR crisis. India bears 23% of the world's pneumonia burden, and this innovation aims to offer a much-needed solution to the growing health crisis.
    - The launch of Nafithromycin marks a significant milestone in India's efforts to develop homegrown solutions for critical healthcare challenges.
- **Approval Status :**It is awaiting final approval from the Central Drugs Standard Control Organization (CDSCO) for public use.

Source:PIB

MEASLES

Context

- According to a newly released report by the World Health Organization, 10.3 million cases of measles were reported globally in 2023, an increase of 20 percent from 2022.

About: Measles

- **Characteristics:** It is a highly **infectious virus**, often characterized by a distinctive **red, spotty rash** that starts on the face and spreads downward, sometimes merging into larger patches.
- **Transmission:** It infects the **respiratory tract** and spreads easily when an infected person breathes, coughs or sneezes.

- **Symptoms:** It includes a high fever, cough, runny nose and a rash all over the body.

- **Vulnerability:** It can affect anyone but is most common in **children**. Also, **no country is exempt** from measles, and areas with low immunization encourage the virus to circulate.

- **Prevention:** It can be prevented with the **MMR vaccine**. The vaccine protects against **three diseases** — measles, mumps and rubella.

- **India's Efforts** :The Universal Immunization Programme (UIP) is one of India's most comprehensive public health initiatives, aiming to provide life-saving vaccines to millions of newborns and pregnant women each year.

  - Currently, the program provides free immunization against **12 diseases, including nine nationwide, such as Diphtheria, Tetanus, Polio, Measles, and Hepatitis B.**

Source: AIR

NEW MICROBE CAUSING DISEASE IN SESAME

Context

- A new microbe causing disease in sesame fields of Midnapore, West Bengal was identified by researchers.

About: Sesame

- Sesame, the Queen of Oil, is an **ancient oilseed crop** since the remnants of sesame seeds were discovered at **Harappa and Mohenjodaro.**

- Sesame oil is excellent from a **medicinal point** of view as it contains antioxidants, and it is perfect for **heart patients**.

- However, despite its advantages, sesame is not commonly used as the **primary edible oil** in India and to harness the benefits of Indian sesame varieties, improvements are needed.

What does the new study say?

- In recent years, sesame plants were observed to revert from their flowering/fruiting stage to a vegetative state, with white flowers turning green.

- **Causes :** The disease is caused by a bacterium, **Candidatus Phytoplasma**, found in the gut of pests like leafhoppers and plant-hoppers.

- **Transmission Mechanism**: The bacteria are transmitted by phloem-feeding insects (e.g., leafhoppers, plant-hoppers), which also infect other crops like tobacco, maize, and grapevine.

- **Disease Manifestations**: The infection leads to disfigurement and virescence (greening) of the floral parts, giving them a leafy appearance.

- **Focus:** The research explores the impact of Phytoplasma on sesame's metabolic pathways and the development of disease symptoms.

- **Research Significance**: This multi-target approach is valuable for studying complex biological systems and may aid in understanding and managing diseases in crops.

Source: PIB

D'CUNHA COMMITTEE

Context

- The D'Cunha Committee investigated alleged irregularities in COVID-19 management and procurement in Karnataka.

About D'Cunha Committee

- It was established to investigate the alleged multi-crore irregularities in COVID-19 procurements.

- It highlighted issues in ventilator purchases under **PM Cares** and by the Karnataka Medical Supplies Corporation Ltd. (KSMSCL).

- **Overpricing and rate variations** (5– 16.25 lakh) in ventilator procurements and discrepancies in supply orders were also noted.

Recommendation

- The committee recommended a **detailed investigation through the Lokayukta or other agencies**.

- It emphasizes the need for **transparency and accountability** in public health procurements during emergencies.

Source: TH

125TH BIRTH ANNIVERSARY OF DR. HAREKRUSHNA MAHTAB

Context

- The Inauguration of the 125th Birth Anniversary Celebration of **Dr. Harekrushna Mahtab** is held in New Delhi.

About

- **Birth:** Dr. Harekrushna Mahtab, also known as **"Utkal Keshari,"** was born on 21 November 1899, in Agarpara, **Odisha.**

- **He was a multifaceted leader** in Indian history, known as a freedom fighter, politician, historian, writer, social reformer, and journalist.
- He was deeply influenced by figures like Swami Vivekananda, Ramkrishna Paramhansa and Mahatma Gandhi.

Political life

- He actively participated in events such as the **Non-Cooperation Movement, Salt Satyagraha etc.**
- He was arrested multiple times for his activism and was **instrumental in the integration of Odisha into the Union of India.**
- Dr. Harekrushna Mahtab was the last Prime Minister of the princely state and served as **Chief Minister** in independent India.
- He also served as the **Union Minister for Commerce and Industry** and was elected to the **Lok Sabha** unopposed in **1962.**

Literary Work

- Dr. Harekrushna Mahtab wrote extensively in both **Odia and English.**
    - **History of Orissa:** A significant historical account showcasing the rich cultural and historical heritage of Odisha.
    - **Gaon Majlis:** He won the **Sahitya Akademi Award** in **1983** for this literary work.

Source: PIB

PRIVATE PLAYERS IN GROUND SEGMENTS OF SPACE SECTOR

Context

- The Indian National Space Promotion and Authorisation Centre (IN-SPACe) is looking at ways for entry of private players in ground operations.

About segments

- Ground stations are ground-based antennas that help in **communicating with the satellites.**
- Ground Station offers **services** such as satellite control, telemetry and tracking, space data reception, and space situational awareness on pay-per-use basis.
- Ground station as a service (GSaaS) sector has been **envisioned to grow 30% by 2033.**
- This is in line with the government's vision to increase India's share in the global commercial space market **from 2% to 8% by 2033.**

IN-SPACe

- It was established in **2020** by the **Union Cabinet**, and serves as the **central agency** for regulating and promoting the private space sector.
- It is a single-window, independent, nodal agency which functions as an **autonomous agency in the Department of Space (DOS).**
- IN-SPACe plays an important role in **boosting the private space sector economy in India.**
- **Three Directorates** viz., Promotion Directorate (PD), Technical Directorate (TD) and Program Management and Authorization Directorate (PMAD) are carrying out the functions of IN-SPACe.

Source: IE

SAINT FRANCIS XAVIER

Context

- Pilgrims and tourists from around the world will come to Goa for the 45-day long event of the **exposition of sacred relics of Saint Francis Xavier.**

About

- St. Francis Xavier (1506–1552) was a prominent Catholic missionary and a **co-founder of the Society of Jesus (Jesuits).**
- He is also referred to as **"Goencho Saib" (Lord of Goa),** arrived in Goa — then a Portuguese colony — in **1542**.
    - His primary mission, as ordered by King John III, was to **restore Christianity among the Portuguese settlers.**
- He died in **1552** on Shangchuan island off China's coast.
- The exposition is a spiritual event and has also become an international event.
    - The exposition became a more regular event after Goa was liberated from Portuguese rule in 1961, and has been **held once every decade since 1964**.

Source: IE

HIV GENOME DETECTION WITH TAILORED FLUOROGENIC TESTS

Context

- Researchers at Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) developed a technology for detecting HIV-genome derived G-Quadruplex (GQ).

Problem with Current Methods:

- Traditional HIV diagnostic tests, including nucleic acid-based methods, can suffer from false positives and missed early infections due to non-specific DNA probes and cross-reactivity.
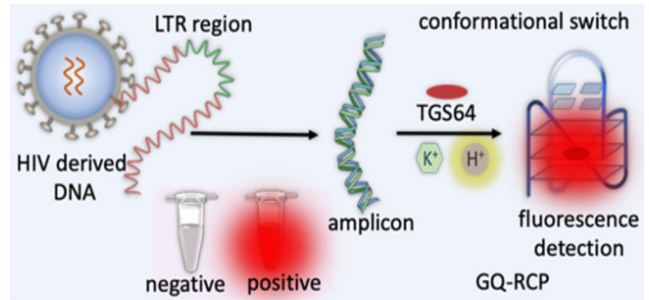
About New Diagnostic Technology

- It is named GQ Topology-Targeted Reliable Conformational Polymorphism (GQ-RCP).

- It was initially designed for detecting pathogens like SARS-CoV-2, now adapted for HIV.

- It uses a **fluorometric test**, which offers increased reliability in diagnosing HIV and reduces false positives.

Advantages:

- Novel diagnostic platform based on nucleic acid-small molecule interactions.

- Reduces false positives, offers sequence-specific recognition.

- Can be integrated into existing nucleic acid-based diagnostic platforms.

- Applicable for detecting various DNA/RNA based pathogens, including bacteria and viruses.

Source: PIB

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