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## Current Affairs - 14 December 2024

### ARCTIC ICE MELTING - FIRST ICE-FREE DAY IN THE ARCTIC COULD COME

#### BY 2030

#### Arctic Region



○ The Arctic region, or the Arctic, is a geographic region spreading around the North Pole.

○ It includes the northern parts of Canada, the United States, Russia, Finland, Sweden, Norway, Iceland, and Greenland.

○ The Arctic Ocean lies between these lands. An imaginary line, called the Arctic Circle, surrounds most of the area.

- The Arctic Circle (66° 33'N) defines the Arctic based on solar radiation.

#### • Geography and Climate

- The Arctic consists mainly of flat, treeless tundras with some mountainous areas.
- Much of the ground is permanently frozen, with only the top layer thawing in summer.
  - Greenland is largely covered by a permanent ice sheet.
- **Daylight:** The North Pole experiences six months of darkness followed by six months of constant daylight, while Arctic lands farther south have shorter periods of daylight in winter and brief darkness in summer.
- **Temperature:** Winters are extremely cold, with temperatures reaching  $-90^{\circ}\text{F}$  ( $-68^{\circ}\text{C}$ ) inland, while summers are mild at around  $50^{\circ}\text{F}$  ( $10^{\circ}\text{C}$ ). Snowfall is heavier near the coasts.

#### • Flora and Fauna

- **Plants:** Trees are scarce, growing only in southern regions. The tundras support lichens, mosses, grasses, and some flowering plants.
- **Animals:** The Arctic hosts polar bears, caribou, Arctic foxes, Arctic hares, gray wolves, seals, walruses, whales, and various fish. Birds like the snowy owl live year-round, while others migrate during summer.

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- **Human Presence**

- **Indigenous Peoples:** Indigenous groups like the Nenets, Sakha, Evenk, Chukchi, Sami, Inuit, and Aleuts traditionally inhabit the Arctic, living in small settlements.
- **Settlers:** In the 1900s, industries such as mining and oil drilling attracted settlers of European descent, who established larger towns and cities.

### What happens if the Arctic becomes ice-free?

- **Impact on Climate Change**

- The loss of Arctic Sea ice accelerates climate change due to the **Albedo effect**, where the reflective ice is replaced by darker ocean water that absorbs more solar energy.
- This leads to increased warming in the Arctic, triggering extreme weather events in mid-latitudes.

- **Rising Sea Levels**

- Global sea levels are already rising at an accelerated rate of 3.6 mm per year, 1.5 times faster than the 1990s.
- If the Greenland ice sheet melts entirely, sea levels could rise by six meters, threatening coastal communities worldwide.

- **Ecosystem Disruption**

- Species like polar bears, walruses, Arctic foxes, snowy owls, and reindeer are at risk due to habitat loss and melting permafrost.
- Marine animals are migrating further north for colder waters, disrupting food chains and dependent species.

- **Human and Infrastructure Impact**

- The Arctic is warming four times faster than the global average, endangering ecosystems, infrastructure, and livelihoods of Arctic communities.
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### EXERCISE DESERT KNIGHT



- It is a trilateral air combat exercise between India, France and the UAE.
  - This exercise builds on the trilateral framework established in 2022 by the foreign ministers of India, France, and the UAE. This partnership includes collaboration in defence, technology, energy, and environment, among other areas, as outlined in an ambitious roadmap.
  - The exercise is described as a “large force engagement,” featuring intensive combat manoeuvres approximately 350-400 km southwest of Karachi over the Arabian Sea.
  - It is the second such trilateral endeavour this year to build synergy among the three air forces as well as improve combat skills, with multiple aircraft types operating in a realistic scenario.”
  - It features intensive combat manoeuvres involving advanced aircraft like Sukhoi-30MKIs, Rafales and F-16s.
  - This trilateral exercise comes as part of broader efforts to strengthen defence ties in strategically crucial regions, including the Indo-Pacific and the Persian Gulf.
  - It also highlights the increasing focus on interoperability among like-minded nations amidst concerns over China's assertive posturing and expanding influence in these areas.
  - Significance: This marks a continued effort to build strategic partnerships in the Indo-Pacific and Persian Gulf regions amid global geopolitical tensions.
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### ABATHSAHAYESWARAR TEMPLE



The 1,300-year-old Abathsayeshwarar Temple has been chosen by UNESCO to receive the Asia-Pacific Awards for Cultural Heritage Conservation award.



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- Location: It is located in Thukkatchi in Thanjavur district of Tamil Nadu.
- It was constructed during the reigns of Kings Vikrama Chola and Kulothunga Chola.
- This temple stands as a testament to the architectural brilliance and spiritual dedication of the Chola dynasty.
- Historically, the village surrounding the temple was known as Vikrama Chozheeswaram and Kulothunga Chola Nallur, named after these illustrious rulers.
- Kulothunga Chola also installed the idol of Aadhi Sarabeshwarar in the temple.
- The temple is home to numerous deities, including Soundaryanayaki Ambal and Ashtabhuja Durga Parameshwari and also consists of five prakarams or enclosures.

### Key facts about UNESCO Asia - Pacific Awards for cultural heritage conservation

- This award recognises the efforts of individuals and organizations in Asia and the Pacific in restoring, conserving, and otherwise transforming structures and buildings of heritage value since its establishment in 2000.
  - In acknowledging private efforts to restore adapt and breathe new life into historic properties, the Awards encourage other independent efforts, as well as public-private partnerships to undertake conservation projects in their communities.
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### WHAT IS DIRECTORATE OF REVENUE INTELLIGENCE (DRI)?



- DRI was constituted in 1957 as the apex anti-smuggling intelligence and investigation agency.
  - It works under the Central Board of Indirect Taxes & Customs, Ministry of Finance, Government of India.
- DRI enforces the provisions of the Customs Act, 1962, and over fifty other allied Acts, including the Arms Act, NDPS Act, COFEPOSA (Conservation of Foreign Exchange and Prevention of Smuggling Activities), Wildlife Act, Antiquities Act, etc.



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- It is tasked with detecting and curbing the smuggling of contraband, including drug trafficking and illicit international trade in wildlife and environmentally sensitive items, as well as combating commercial frauds related to international trade and evasion of customs duty.
- It has a country-wide network of zonal, regional and sub-regional units and intelligence cells.
- DRI collects, analyzes, and disseminates intelligence to the field formations, helps in investigations, and keeps statistics of seizures and prices/rates, etc., for watching trends of smuggling and movement of other contraband and suggest remedies for fixing loopholes in existing laws and procedures.

### NO INDIAN CITY MEETS WHO AIR QUALITY STANDARDS

#### WHO's revised air quality guidelines 2021

| New WHO Global Air Quality Guidelines                |             |             |                 |
|--|-------------|-------------|-----------------|
| Pollutant  | Time        | 2005 levels | New 2021 levels |
| PM <sub>2.5</sub><br>Particulate matter <2.5 microns | Annual      | 10          | 5               |
|  | 24-hour     | 25          | 15              |
| PM <sub>10</sub><br>Particulate matter <10 microns   | Annual      | 20          | 15              |
|  | 24-hour     | 50          | 45              |
| O <sub>3</sub><br>Ozone                              | Peak season | -           | 60              |
|  | 8-hour      | 100         | 100             |
| NO <sub>2</sub><br>Nitrogen dioxide                  | Annual      | 40          | 10              |
|  | 24-hour     | -           | 25              |
| SO <sub>2</sub><br>Sulfur dioxide                    | 24-hour     | 20          | 40              |
|  | 24-hour     | -           | 4               |

○ In September 2021, WHO updated its air quality guidelines (AQGs) to reflect the serious health impacts of air pollution:

- **PM<sub>2.5</sub>**: The annual mean concentration should not exceed 5 µg/m<sup>3</sup>. This is half of the 2005 guideline of 10 µg/m<sup>3</sup>.
- **NO<sub>2</sub>**: The annual mean concentration should not exceed 10 µg/m<sup>3</sup>.
- **Ozone**: The peak season mean 8-hour concentration should not exceed 60 µg/m<sup>3</sup>.
- **PM<sub>10</sub>**: The annual mean concentration should not exceed 15 µg/m<sup>3</sup>, and the 24-hour mean should not exceed 45 µg/m<sup>3</sup>.
- **SO<sub>2</sub>**: The 24-hour mean concentration should not exceed 40 µg/m<sup>3</sup>.
- **CO**: The 24-hour mean concentration should not exceed 7 µg/m<sup>3</sup>.





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### • Non-binding in nature

- The WHO AQGs are not legally binding, but they are often used by countries and legislative bodies to set air quality policies.
- The guidelines are based on scientific evidence from multiple countries and are intended to help reduce the health impacts of air pollution.

### India's National Ambient Air Quality Standards (NAAQS)

- Ambient air quality refers to the condition or quality of air surrounding us in the outdoors.
- Under the authority of the **Air (Prevention and Control of Pollution) Act of 1981**, India's Central Pollution Control Board sets national ambient air quality standards.
- The current Standards include following 12 pollutants:

| Pollutant  | Time Weighted Average | Industrial, Residential, Rural, and Other Areas | Ecologically Sensitive Area (notified by Central Government) |
|--|-----------------------|---|--|
| Sulphur dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>                  | Annual 24 hours       | 50  | 20   |
| Nitrogen dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>                 | Annual 24 hours       | 40  | 30   |
| Particulate matter (< 10 µm) or PM <sub>10</sub> , µg/m <sup>3</sup>   | Annual 24 hours       | 100   | 100  |
| Particulate matter (< 2.5 µm) or PM <sub>2.5</sub> , µg/m <sup>3</sup> | Annual 24 hours       | 40  | 40   |
| Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>                             | 8 hours 1 hour        | 180   | 180  |
| Lead (Pb), µg/m <sup>3</sup>   | Annual 24 hours       | 0.50  | 0.50   |
| Carbon monoxide (CO), mg/m <sup>3</sup>                                | 8 hours 1 hour        | 1.0   | 1.0  |
| Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>                          | Annual 24 hours       | 02  | 02   |
| Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>            | Annual                | 04  | 04   |
| Benz(a)Pyrene (BaP) - particulate phase only, ng/m <sup>3</sup>        | Annual                | 100   | 100  |
| Arsenic (As), ng/m <sup>3</sup>  | Annual                | 400   | 400  |
| Nickel (Ni), ng/m <sup>3</sup>   | Annual                | 05  | 05   |
|  |                       | 01  | 01   |
|  |                       | 06  | 06   |
|  |                       | 20  | 20   |

### • Key highlights of the study

#### • Widespread Air Pollution in India

- No area in India meets the WHO's recommended PM<sub>2.5</sub> pollution level of 5 µg/m<sup>3</sup>.
- 81.9% of the population lives in areas exceeding India's National Ambient Air Quality Standards (NAAQS) of

40 µg/m<sup>3</sup>.

#### • Health Impact of Air Pollution

- High levels of PM<sub>2.5</sub> are linked to 1.5 million deaths annually in India.
- Long-term exposure to air pollution increases risks of respiratory diseases, heart attacks, strokes, high blood pressure, and developmental delays in children.
- Every 10 µg/m<sup>3</sup> increase in PM<sub>2.5</sub> levels raises the risk of death by 8.6%.

#### • Regional Pollution Levels

- Pollution levels ranged from 11.2 µg/m<sup>3</sup> in Arunachal Pradesh's Lower Subansiri district (2019) to 119 µg/m<sup>3</sup> in Ghaziabad and Delhi (2016).



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- **Potential for Improvement**
  - Meeting NAAQS could prevent 0.3 million deaths annually; achieving WHO levels would save even more lives.
  - Identifying and addressing pollution sources, such as construction, vehicular emissions, and crop burning, is critical.

### MEHRAULI ARCHEOLOGICAL PARK



- It is situated in Delhi, just beside the Qutb Complex (historically Mehrauli was the first of the seven cities of Delhi).
- Spanning an area of more than 200 acres (80 ha), the site displays the rich heritage of India, starting from the pre-Islamic to the Colonial phase.
- It accounts for several historically significant monuments, including the remains of the first city of Delhi, the capital of the Tomar rulers in the 11th century.
- There are over 440 monuments in the area.
- The Tomb of Balban, dating back to around 1287 AD, marks a significant milestone in Indian architecture, featuring the country's first true arch and dome.
- The Jamali Kamali Mosque and Tomb (1526-1535 AD) showcase a harmonious blend of Indo-Islamic architecture.
- Named after the Sufi saint Jamali and his companion Kamali, this complex boasts intricate decorative elements and a central dome that speak to the artistic prowess of its time.
- 16th-century Rajon Ki Baoli, or Stepwell of the Masons, with its symmetrical steps and arched niches serving both practical and aesthetic purposes.
- The park also houses spiritual landmarks like the Dargah of Qutab Sahib, a serene white marble shrine dedicated to a revered Sufi saint, and the Hijron ka Khanqah, a Sufi hospice from the Lodhi dynasty that provided shelter and spiritual solace to the transgender community.



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- Jahaz Mahal, or "Ship Palace," a Lodi-era pleasure pavilion whose boat-like shape and arched openings make it a unique architectural gem.
- Iron Pillar: The iconic Iron Pillar is renowned for its remarkable corrosion resistance despite being over a thousand years old.

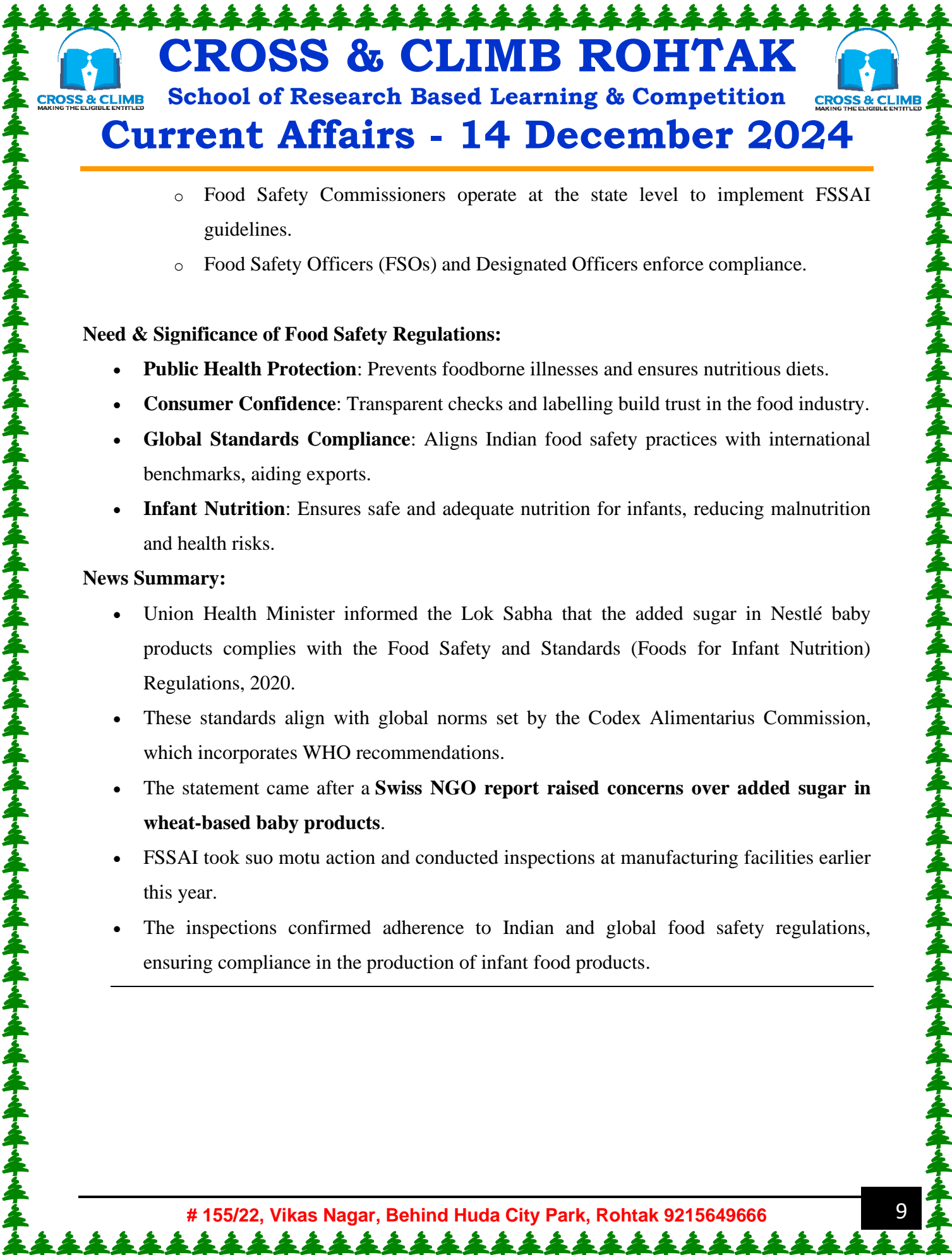
### FOOD SAFETY AND STANDARDS IN INDIA

- **Legal Framework:**
  - The **Food Safety and Standards Act, 2006** (FSS Act) is the overarching legislation regulating food safety and standards in India.
  - It consolidated multiple acts like the Prevention of Food Adulteration Act, 1954, and others to create a unified food law.
- **Objectives:**
  - Ensure food safety and consumer protection.
  - Regulate the manufacture, storage, distribution, sale, and import of food.
  - Establish science-based standards for food articles.
- The Act covers the entire food value chain, from production to consumption, emphasizing hygiene, safety, and quality.

### **Food Safety and Standards Authority of India (FSSAI):**

- The FSSAI was established under the FSS Act, 2006. It functions under the Ministry of Health and Family Welfare.
- **Role of FSSAI:**
  - Formulate food safety standards
  - License and regulate food businesses
  - Conduct inspections and audits
  - Educate stakeholders about food safety
  - Monitor food recalls, testing, and labelling
- **State-Level Authorities:**





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- Food Safety Commissioners operate at the state level to implement FSSAI guidelines.
- Food Safety Officers (FSOs) and Designated Officers enforce compliance.

### Need & Significance of Food Safety Regulations:

- **Public Health Protection:** Prevents foodborne illnesses and ensures nutritious diets.
- **Consumer Confidence:** Transparent checks and labelling build trust in the food industry.
- **Global Standards Compliance:** Aligns Indian food safety practices with international benchmarks, aiding exports.
- **Infant Nutrition:** Ensures safe and adequate nutrition for infants, reducing malnutrition and health risks.

### News Summary:

- Union Health Minister informed the Lok Sabha that the added sugar in Nestlé baby products complies with the Food Safety and Standards (Foods for Infant Nutrition) Regulations, 2020.
  - These standards align with global norms set by the Codex Alimentarius Commission, which incorporates WHO recommendations.
  - The statement came after a **Swiss NGO report raised concerns over added sugar in wheat-based baby products.**
  - FSSAI took suo motu action and conducted inspections at manufacturing facilities earlier this year.
  - The inspections confirmed adherence to Indian and global food safety regulations, ensuring compliance in the production of infant food products.
-