

DAILY CURRENT AFFAIRS (DCA)

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BUILDING A HOLISTIC CARE SYSTEM FOR INDIA

Context

- India's care economy remains fragmented despite its critical role in women's workforce participation, human development and support for an ageing population.

What is the Care Economy?

- Caregiving involves the **physical, emotional, and social support** provided to individuals who are unable to perform daily activities independently due to age, illness, or disability, according to the World Health Organization.
- The **Indian care services market** was valued at **USD 29.62 billion in 2023** and is projected to grow at a compound annual growth rate (CAGR) of 13.76 per cent, reaching USD 72.31 billion by 2030.

Components of India's Care Economy

- Unpaid Care Work:** It includes activities such as **childcare, elderly care, cooking, cleaning, household management, and care for sick family members**, which are essential for family well-being but remain largely unpaid and unrecognised.
- Paid Care Work:** Paid care work includes services provided by **healthcare workers, nurses, doctors, ASHA workers, Anganwadi workers, domestic workers, childcare providers, social workers, and caregivers**.
 - These services form an important part of India's **social and economic infrastructure**.
- Community Care Services:** Community-based care services include support systems provided through **self-help groups, community health workers, and welfare programmes** that assist vulnerable populations.

Why Does India Need a Holistic Care System?

- Women's labour force participation:** In the **Periodic Labour Force Survey 2025**, **44.4%** of women outside the labour force cited childcare and homemaking as the main reasons for staying out of the labour force.
- Unequal burden of unpaid care:** India's **Time Use Survey 2024** found that **41%** of women aged **15–59** provided unpaid care.
- Demographic Transition:** An expanding elderly population is creating the need for long-term eldercare services in India.

- Urbanisation and Migration:** The joint family structures are being eroded because of rapid urbanisation and migration. Nuclear families are generally devoid of informal networks for caring support.

Government Initiatives Related to the Care Economy

- SHATAYU (Senior Holistic Care Assistance and Training for Your Utility) Dashboard:** A dashboard, developed to support and strengthen caregiving services for senior citizens across the country, was also launched during the National Workshop on "Creating a Well-Functioning Care Economy" in 2026.
- JEEVAN (Joint Elderly Empowerment & Virtual Assistance Network) Application:** It is an accessible, citizen-facing mobile application engineered to serve as a single-window support ecosystem for senior citizens.
 - The app consolidates information on government welfare schemes, senior citizen homes, and support services.
- Vayo Manasa Sanjeevani:** It is an initiative to spread awareness and provide online education to promote mental health support among elderly persons and support healthy ageing.
- Saksham Anganwadi and POSHAN 2.0:** Support early childhood care, development and nutrition through the Anganwadi network.
- Palna Scheme:** Provides crèche facilities to support childcare, particularly for working mothers.

Initiatives Taken by the State Government

- Geriatric Caregiver Training Programme:** The Government of Odisha runs a 3-month certificate course, which provides training for extending physical and mental health support to elderly persons.
- Monthly Allowance for Unpaid Caregivers:** Karnataka became the first state in India to introduce a scheme titled "**Carer's monthly allowance scheme**" which provides a monthly allowance of **Rs. 1,000** to parents of individuals with severe disabilities such as Cerebral palsy, muscular dystrophy, Parkinson's disease, and multiple sclerosis.

Challenges in Implementing Care Economy Reforms

- Fiscal Constraints:** The expansion of the care infrastructure and staff training will require

significant public investment and a long-term commitment to funding.

- **Care is split across multiple Ministries**, from women and child development to housing and urban affairs. Each runs valuable programmes, but without a common framework.
- **Social Attitudes to Care Work:** Care work is still perceived as a private family responsibility and not a public policy issue.
 - ♦ **Societal patriarchal traditions** that are highly ingrained curtail the acknowledgement of unpaid caring work.
- **Weak Regulatory Capacity:** Ensuring quality standards and monitoring care institutions across India is an administrative challenge.
- **Lack of Skilled Care Workforce:** India does not have a properly trained care workforce, particularly in the areas of eldercare, disability care and early children care.

International Best Practices

- **Colombia's 2025 National Care Policy** brings 34 government entities under one framework.
- **Brazil's 2024 National Care Policy and 2025 National Care Plan** set up inter-ministerial committees to steer implementation.
- In Nepal, geospatial and demographic care mapping was utilised to identify gaps in childcare, eldercare, and disability support, turning data into local service prototypes and funding care pilots.

Way Ahead

- **NITI Aayog's** Reimagining Care: Strategies for Empowering Caregivers in Viksit Bharat@2047 report proposes a **National Caregiving Council** to strengthen coordination
- **States should map care needs**, existing facilities and demographic trends to identify gaps in childcare, eldercare and disability support.
- **Professionalise the care workforce:** Introduce standardised training, certification and skill development for caregivers.

Source: TH

KHELO INDIA SPORTS GOODS MANUFACTURING SCHEME

Context

- The Union Cabinet has approved the **Khelo India Sports Goods Manufacturing Scheme**.

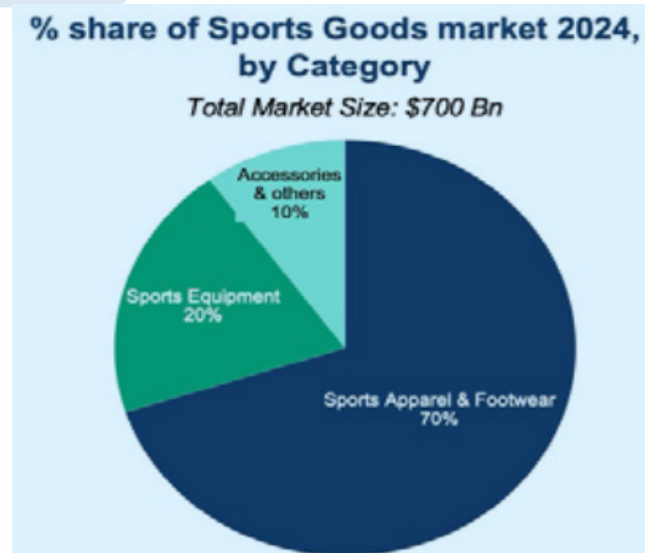
About Khelo India Sports Goods Manufacturing Scheme

- **Aim:** To promote investment, manufacturing, innovation and exports, and strengthen India's position in the global sports goods sector.
- **Time Period:** 2026 to 2033-34.
- The scheme was announced in the **Union Budget 2026-27** and the Scheme **seeks to strengthen India's sports goods manufacturing**.



Global Market Opportunity in Sports Sector

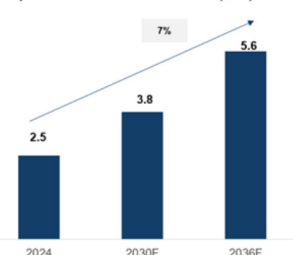
- The global sports goods market, encompassing sports apparel, footwear, equipment, and accessories, was valued at approximately **\$700 billion in 2024** and is projected to cross **\$1 trillion by 2036**.
- Within this ecosystem, the **sports equipment segment** alone accounts for approximately **\$140 billion**, with global demand expected to reach around **\$283 billion by 2036**.



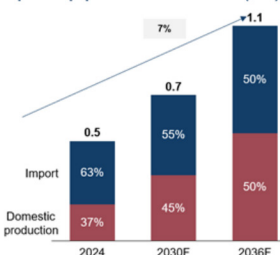
India's Position in Sports Equipment Manufacturing

- India's domestic sports goods market is estimated at approximately **\$2.5 billion**, with sports equipment accounting for nearly **\$0.5 billion**, indicating substantial scope for expansion in both domestic production and exports.

Sports Goods India Market Size (\$Bn)



Sports Equipment India Market Size (\$Bn)



- India currently exports approximately **\$275 million** worth of sports equipment annually, representing around **0.5%** of the global export market.
- Manufacturing activity is concentrated** in established clusters such as Jalandhar (Punjab) and Meerut (Uttar Pradesh), supported by a network of exporters, domestic manufacturing units, and thousands of micro enterprises.
- The sector is **overwhelmingly MSME-driven**, with nearly **90%** of production undertaken by small and micro enterprises.
- Products with an international presence:** India manufactures cricket bats, protective gear, inflatable balls, and gym and athletic training equipment.
 - The United Kingdom, United States and Australia** together receive over half of India's sports equipment exports.
- Significant long-term potential:** India's sports equipment exports could reach approximately US\$8.1 billion by 2036, potentially generating around 54 lakh additional direct and indirect jobs.
- A decade of major events:** the Los Angeles Olympics 2028, the Commonwealth Games 2030 in Ahmedabad, the Brisbane Olympics 2032 and India's planned bid for the 2036 Olympic Games create a decade of demand for sports equipment.

Key Challenges Affecting Export Competitiveness

- High customs duties** on critical raw materials such as carbon fibre, EVA foam, and polyurethane materials.
- High certification costs** required to meet international sporting standards.
- Logistics inefficiencies** and higher input costs.
- Limited access** to advanced manufacturing technologies.
- Weak linkages** with global sports brands and procurement ecosystems.
- Limited global visibility** and branding of Indian sports equipment.

Government Initiatives

- BHAVYA:** The Bharat Audyogik Vikas Yojna provides for 100 plug-and-play industrial parks.
 - Facilities such as ready-built factory sheds, testing laboratories and warehousing provide the infrastructure needed by manufacturers.
- National Industrial Corridor Development Corporation Limited (NICDC):** NICDC helps develop industrial cities with land, roads, power, water and transport links for manufacturers.
 - Its industrial corridor programme covers 20 industrial smart cities across 13 States, with four completed as of September 2026.
- Research and Innovation:** Anusandhan National Research Foundation (ANRF) supports research and collaboration between educational institutions, research organisations and industry.
- Khelo India and Fit India:** Khelo India supports participation, talent development, training and sports infrastructure, while Fit India promotes fitness and an active lifestyle.

Policy Recommendations to Boost Sports Equipment Exports

- Cost Competitiveness:** Rationalise import duties on critical raw materials such as carbon fibre, EVA foam, and polyurethane to reduce input costs.
- Strengthening MSME Ecosystem:** Expand targeted financial support, credit access, and technology upgradation schemes for MSMEs.
- Cluster-Based Manufacturing Development:** Develop new port-proximate greenfield clusters to reduce logistics costs and improve export efficiency.
- Quality Standards:** Set up world-class testing and certification facilities to meet international standards.
- Establish dedicated sports technology** innovation hubs in collaboration with academia and industry.

Conclusion

- India needs a **holistic ecosystem approach** combining cost competitiveness, quality enhancement, and global integration is essential.
- With sustained policy push, it can transition from a low-share exporter to a **global leader in sports equipment manufacturing**.

Source: PIB

THE RISE IN YOUTH UNREST AND UNDERLYING REASONS

Context

- Many countries in the world including **France, Spain, Albania and even India** are witnessing mobilisation by youths.

About

- France has witnessed severe economic problems** — high unemployment, low growth, rising cost of living, falling real wages and severe cutbacks in public expenditure.
- At the heart of it all is the **neoliberal economic model**, which aggressively enforced reduced public expenditure in general, and welfare spending in particular.

Causes of Youth Unemployment

- Slow Economic Growth:** Slower economic growth limits the expansion of businesses and reduces the creation of new jobs.
 - There is a declining youth population in many developed countries and still youth unemployment remains high.
 - This indicates that the problem is not merely an excess supply of labour but also insufficient demand for it.

Chart 1: Wrath of the unemployed Gen Z

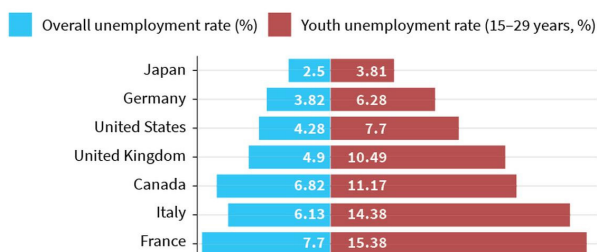


Chart: Azad & Chowdhury. Source: Authors' calculations. International Labour Organisation (ILO), International Labour Organisation Statistics (ILOSTAT)

- Declining Investment:** According to heterodox economic approaches, employment depends significantly on investment and overall demand for goods and services. When businesses reduce investment, economic activity slows, reducing the demand for workers.
- Neoliberal Economic Policies:** Neoliberalism emphasises market-led growth, which means reduced government intervention including privatisation and fiscal restraint.
 - The reduced public expenditure coupled with weakening of labour unions and reduced welfare support have contributed to economic

insecurity and weakened workers' bargaining power.

- Rising Inequality and Underconsumption:** When wages grow slowly or the share of national income going to workers declines, the household consumption also weakens.
 - Lower consumption can discourage businesses from investing in additional production, creating a cycle of slow growth and unemployment.
- Technological Displacement:** Automation and artificial intelligence (AI) have replaced certain tasks performed by workers, potentially reducing demand for some jobs.
 - Young people entering the labour market face greater competition if the creation of new jobs does not keep pace with technological change.
- Rising Cost of Education:** Education has become increasingly expensive in many countries, while obtaining a degree does not guarantee secure or adequately paid employment.
 - This creates financial pressure and frustration among young people, particularly those who struggle to find jobs matching their qualifications.

Way Forward

- Promote Employment-Intensive Growth:** There is a need to encourage labour-intensive sectors, support small and medium enterprises, and increase investment in infrastructure and public services to expand employment opportunities.
- Improve Education and Skill Development:** Affordable education, vocational training and stronger links between educational institutions and employers can help young people access suitable employment.
- Manage Technological Change:** Governments and businesses should invest in reskilling, worker protection and the creation of new employment opportunities to address the disruptive effects of automation and AI.
- Strengthen Labour Market Institutions:** Effective labour protections, collective bargaining and fair wages can improve workers' bargaining power while supporting sustainable economic growth.

Conclusion

- Youth unemployment is not merely a problem of individual skills or employability; it is also linked to

investment, aggregate demand, wage distribution and the structure of economic growth.

- There is a need for a **balanced approach** combining productive investment, effective public policies, social protection and opportunities for decent work.
- Reducing youth unemployment is essential not only for economic stability but also for social inclusion and intergenerational equity.

Source: TH

IMMERSIVE TECHNOLOGIES

In Context

- Over the last decade, India has built a **strong digital ecosystem** that has transformed everyday interactions with technology through platforms such as **UPI, Aadhaar, DigiLocker, UMANG and BHASHINI**.

About

- India is projected to be the **fastest-growing regional market in Asia Pacific**, supported by its digital ecosystem, expanding middle class and rising e-commerce adoption.
- India's immersive-tech market was about \$1.26 billion in 2023 and is projected to reach \$7.82 billion by 2030 (29.8% CAGR), the fastest in Asia-Pacific.

What are Immersive Technologies?

- Immersive technologies are technologies that create a **simulated experience that can be perceived by the user as real**.
- The **three most common forms of immersive technology** are Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) & collectively, these technologies are often referred to as **Extended Reality (XR)**.

Virtual Reality (VR) Completely digital environment	Augmented Reality (AR) Digital content over real world	Mixed Reality (MR) Real and digital worlds interact
		
- Creates a fully simulated digital world that surrounds the user. - Mainly uses sight and sound to create a sense of presence. - Users can explore and interact with the virtual environment using specialised devices (e.g. VR headsets). Example: Virtual tours, gaming, flight simulators, virtual classrooms.	- Adds digital information to the user's real-world environment. - Can use sight and sound, while keeping the real world visible. - Displays information, directions or digital objects over the physical world. Example: Navigation apps, live information overlays, AR filters in smartphones.	- Combines real and digital worlds in an interactive environment. - Uses sight and sound, and allows digital objects to interact with physical surroundings. - Users can see and interact with digital objects as if they are part of the real environment. Example: Design and prototyping, medical training, industrial maintenance.

- The **360-degree video and Haptic Technology** is also part of the wider **immersive technology ecosystem**.

- ♦ 360-degree video allows users to view a scene in every direction.

Applications of Immersive Technologies

- **Education:** IIT Madras is building AR/VR learning for rural schools, so a student can "walk" through a virtual lab instead of only reading about one.
- **Heritage and tourism:** The JATAN software digitises museum collections. The Indian Museum, Kolkata uses AI and AR features, and ASI museums at Hampi and Nalanda offer virtual tours.
- **Governance:** DoT's "**Sangam: Digital Twin**" combines 5G, IoT and AI. Examples include Varanasi's 3D urban planning and the Mobility Digital Twin used in Delhi and Ayodhya. Also, India aims for a National Digital Twin for major cities by 2035.
- **Economy:** The gaming sector is projected to grow from \$3.8 billion (2024) to \$9.2 billion by FY29.

Steps Taken by the Government of India in Immersive Technologies

- **National Strategy for Additive Manufacturing and emerging technologies:** Promotes advanced digital technologies and innovation.
- **Digital India:** Supports digital infrastructure and technology adoption, creating opportunities for XR applications.
- **Smart Cities Mission:** Enables the use of immersive technologies for urban planning, 3D visualisation and infrastructure management.
- **Skill India Mission:** Supports technology-enabled vocational training, including virtual simulations.
- **IndiaAI Mission:** Strengthens the AI ecosystem, which can support AI-enabled immersive applications.
- **AVGC-XR framework:** Immersive technology is supported through the Government's broader AVGC-XR framework.
 - ♦ The AVGC Promotion Task Force was constituted by the **Ministry of Information and Broadcasting (MIB)** in April 2022.
 - ♦ On the Task Force's recommendation, the Government set up a **National Centre of Excellence (NCoE)** to build skilled talent

for the AVGC-XR sector. Later, the Indian Institute of Creative Technologies (IICT) was established in 2025.

- **GENESIS (Gen-Next Support for Innovative Startups):** To boost the startup ecosystem in Tier-II and Tier-III cities, MeitY approved the GENESIS Scheme to support around 1,600 tech startups over five years.

Advantages of using Immersive Technology

- **Better learning outcomes:** Makes complex subjects easier to understand through visualisation and simulation.
- **Economic growth:** Creates opportunities in gaming, animation, virtual production and immersive content.
- **Employment generation:** Opens new career paths in 3D modelling, XR design, software development and digital storytelling.
- **Heritage preservation:** Enables digital documentation and wider access to cultural assets.
- **Improved governance:** Digital twins can support urban planning, mobility analysis and infrastructure management.
- **Strategic capability:** Developing indigenous XR platforms and tools can reduce dependence on imported technologies.

Challenges

- **High costs & heavy imports:** Headsets and GPUs are expensive and mostly imported which puts them out of reach for many schools and small startups.
- **Uneven connectivity:** Real-time VR and digital twins need fast, low-latency networks as rural coverage is still not good.
- **Shortage of skilled people:** There are too few skilled trainers in game engines, spatial audio and computer vision.
- **Health issues:** Long sessions can cause eye strain and motion sickness, and children are especially vulnerable.
- **Privacy risks:** XR devices can capture eye movements, biometric data and even maps of a user's room. Without safeguards, this is sensitive personal data at risk of misuse.

Way Forward

- **Encourage domestic manufacturing** of displays, sensors and lenses (a PLI-type incentive is a suggestion, not an announced scheme).

- **Take XR skills into ITIs, polytechnics** and engineering colleges.
- Build a public library of Indian heritage 3D assets so creators don't start from zero.
- **Frame child-safety rules** and data norms early, in line with the DPDP Act.
- Put rural and Indian-language users at the centre, so that immersion doesn't widen the digital divide.

Source: PIB

GRADED RESPONSE ACTION PLAN (GRAP) LIMITED EFFECTIVENESS IN CURBING POLLUTION

Context

- A study by the Centre for Research on Energy and Clean Air (CREA) found that Delhi's average winter AQI worsened from 280 in 2022–23 to 295 in 2025–26, despite the implementation of the Graded Response Action Plan (GRAP).

Air Quality Index (AQI)

- The Air Quality Index (AQI) is a tool for effective dissemination of air quality information to people.
 - ♦ There are six AQI categories, namely, **Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe.**
- The proposed AQI will consider eight pollutants (**PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb**) for which short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed.

AQI	Associated Health Impacts
Good (0–50)	Minimal Impact
Satisfactory (51–100)	May cause minor breathing discomfort to sensitive people.
Moderately polluted (101–200)	May cause breathing discomfort to people with lung disease such as asthma, and discomfort to people with heart disease, children and older adults.
Poor (201–300)	May cause breathing discomfort to people on prolonged exposure, and discomfort to people with heart disease
Very Poor (301–400)	May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases.
Severe (401–500)	May cause respiratory impact even on healthy people, and serious health impacts on people with lung/heart disease. The health impacts may be experienced even during light physical activity.

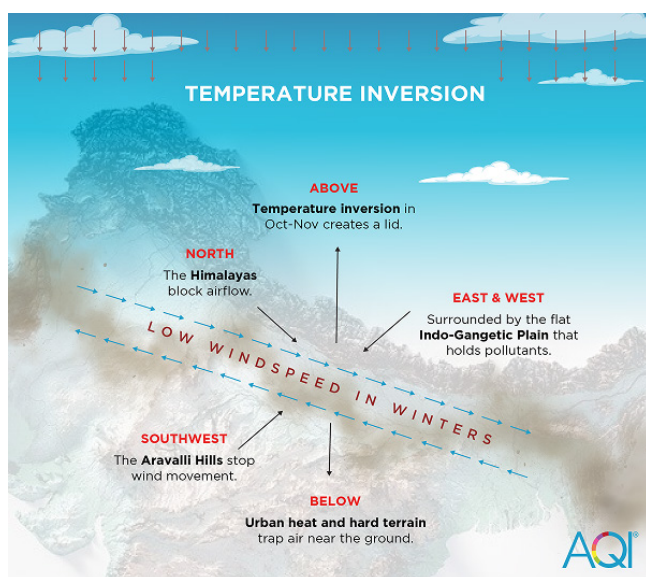
Graded Response Action Plan (GRAP)

- GRAP is a framework implemented by the Commission for Air Quality Management (CAQM) to control air pollution in Delhi-NCR through progressively stricter measures based on AQI levels and forecasts.

Stage	AQI category	Key measures
Stage I	Poor (201–300)	Dust-control measures, road mechanised sweeping and water sprinkling
Stage II	Very Poor (301–400)	Enhanced public transport, increased parking fees and intensified dust control
Stage III	Severe (401–450)	Restrictions on certain polluting vehicles and non-essential construction
Stage IV	Severe Plus (above 450)	Stricter vehicle controls and suspension of construction activities

What's Really Causing Delhi's Air Quality Crisis?

- **Delhi's Topography:** Delhi is surrounded by natural barriers on two sides, in the north, the Himalayas and on the southwest side, the Aravalli Hills block wind movement.
 - ♦ As a result, polluted air cannot disperse and has nowhere to escape.
- **Temperature Inversion (Urban Heat Island Effect):** During winter, the air near the ground becomes cooler than the air above it.
- This inversion layer traps pollutants (such as particulate matter and gases) close to the surface, preventing their vertical dispersion into the upper atmosphere.



- **Low Wind Speeds:** Winds are generally weaker in winter, which reduces horizontal dispersion of pollutants, allowing them to accumulate in the lower atmosphere.

- **Crop Residue Burning:** Each year, post-harvest stubble burning in neighbouring states such as Punjab, Haryana, and western Uttar Pradesh releases large amounts of smoke and particulate matter.
- **Dust and Urban Pollution Entrapment:** Local emissions from vehicles and combustion sources are the most significant contributors.
 - ♦ Urban dust and vehicular emissions linger longer in the atmosphere due to low boundary layer height in winter, compounding the pollution problem.

Steps Taken by the Government to Combat Air Pollution

- **National Clean Air Programme (NCAP):** Launched in 2019, NCAP is a comprehensive initiative aimed at reducing air pollution in identified cities and regions across India.
 - ♦ The programme focuses on improving air quality monitoring, implementing stricter emission standards, and promoting public awareness.
- **Bharat Stage VI (BS-VI) Emission Standards:** The government implemented BS-VI emission standards for vehicles nationwide in 2020.
- **Pradhan Mantri Ujjwala Yojana (PMUY):** It aims to provide clean cooking fuel to households by promoting the use of liquefied petroleum gas (LPG) as an alternative to traditional biomass-based cooking methods.
- **FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) Scheme:** The scheme promotes the adoption of electric and hybrid vehicles to reduce air pollution caused by vehicular emissions.
- **Green Initiatives for Sustainable Habitat (GRIHA):** Developed by TERI and the Ministry of New and Renewable Energy, it serves as India's national rating system for green buildings.
- **Waste Management Programs** including the **Swachh Bharat Abhiyan**, aim to address solid waste issues and promote cleaner disposal methods.
- **Commission for Air Quality Management:** CAQM was constituted under the **Commission for Air Quality Management in National Capital Region and Adjoining Areas Act, 2021.**
 - ♦ **Objective:** The Act provides for the constitution of a Commission for better coordination, research, identification, and

resolution of problems related to air quality in the National Capital Region (NCR) and adjoining areas.

- ♦ **Powers** of the Commission include;
 - **Preparing codes and guidelines** to prevent and control air pollution,
 - **Issuing directions** on matters including inspections, or regulation **which will be binding** on the concerned person or authority.
 - The Commission **may impose and collect environmental compensation** from farmers causing pollution by stubble burning prescribed by the central government.
 - The Commission issues orders to combat air pollution in NCR under the **Graded Response Action Plan (GRAP)**.
- ♦ **In case of any conflict**, the orders or directions of the Commission will prevail over the orders of the respective state governments, the Central Pollution Control Board (CPCB), state PCBs, and state-level statutory bodies.

Way Ahead

- **Emission reduction at source:** Prioritise sustained reductions in emissions from transport, industries, construction, waste burning and other major pollution sources, rather than relying primarily on emergency restrictions.
- **Airshed-based approach:** Ensure coordinated pollution-control measures across Delhi-NCR and neighbouring states, recognising that air pollution extends beyond administrative boundaries.
- **Sector-specific interventions:** Expand public transport, control road dust, enforce industrial emission standards and promote cleaner fuels and technologies.
- **Evidence-based assessment:** Regularly evaluate GRAP using emission trends, pollution-source data and weather conditions to distinguish the impact of restrictions from meteorological fluctuations.

Source: [HT](#)

NEWS IN BRIEF

PRADHAN MANTRI VIKSIT GRAM SWARAJ YOJANA (PM-VGSY)

Context

- The Union Cabinet approved the Pradhan Mantri Viksit Gram Swaraj Yojana (PM-VGSY)

to strengthen grassroots governance and rural development across the country.

About PM-VGSY

- **Type:** Centrally Sponsored Scheme.
- **Ministry:** Ministry of Panchayati Raj.
- **Implementation Period:** The scheme will be implemented from 2026–27 to 2030–31, in line with the **Sixteenth Finance Commission** period, with a total outlay of Rs 7,395.55 crore.
- **Coverage:** An upgraded version of the **Rashtriya Gram Swaraj Abhiyan**, the scheme will cover all States and Union Territories, including traditional rural local government institutions in areas where Panchayats do not exist under **Part IX of the Constitution**.
- **Beneficiaries:** Around 32 lakh elected representatives, Panchayat functionaries and other stakeholders across more than 2.55 lakh Panchayats and traditional local bodies.



Source: [TH](#)

ILLEGAL FOOD COLOURS

Context

- Uttar Pradesh's Food Safety and Drug Administration (FSDA) has issued guidelines to stop street vendors from using banned industrial dyes in food.

What are food colours?

- Food colours are substances added to **make food look brighter, more appealing or more consistent**. They come in two kinds:
 - ♦ **Natural:** From plants and minerals, such as beetroot, turmeric and paprika extract.
 - ♦ **Synthetic:** Lab-made additives that are allowed only in certain food categories and within strict limits.

- **Banned industrial dyes (illegal adulterants):** Rhodamine-B, Metanil Yellow, Malachite Green, Sudan dyes (I-IV), Butter Yellow, Auramine and Orange II.
 - ♦ Banned dyes belong in textiles, leather or paper, not in jalebi or chutney.
- **Permitted synthetic colours (within limits):** Tartrazine, Sunset Yellow FCF, Carmoisine, Ponceau 4R, Erythrosine, Brilliant Blue FCF, Fast Green FCF and Indigo Carmine.
- They are marshy because the **soil may be composed of deep mud and peat.**
 - ♦ Peat is made of **decomposing plant matter** that is often several feet thick.
- They occur along sheltered coastlines, estuaries, bays and tidal flats.
- **Formation:** They develop when sediments accumulate in shallow coastal areas and support salt-tolerant vegetation.

Key Guidelines

- **Prohibited Dyes:** Non-permitted industrial dyes cannot be used in food.
- **Permitted Artificial Colours:** Under the **Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011**, specified artificial colours are permitted in certain sweets and confectionery, cakes, pastries, biscuits, icing, some dairy products, processed fruits, beverages and savoury snacks.
- **Accurate Measurement:** Food businesses must use suitable digital weighing scales instead of estimating colour quantities using spoons or pinches.
- **Record-Keeping:** Businesses must procure colours from authorised sources, verify labels and supplier details, and retain purchase invoices and batch numbers for inspection.

The Legal Framework

- **Food Safety and Standards Act, 2006:** The main law that penalises making, selling or distributing adulterated food.
- **FSS (Food Products Standards and Food Additives) Regulations, 2011:** Lists which colours are allowed in which food categories, sets Good Manufacturing Practices and caps use generally at 100 mg/kg (up to 200 mg/kg in some canned fruits).

Source: IE

SALT MARSHES

Context

- Gujarat is home to **India's largest coastal salt marshes**, with smaller areas in Tamil Nadu, Andhra Pradesh, and Maharashtra.

Salt Marshes

- Salt marshes are **coastal wetlands** that are **flooded and drained by salt water brought in by the tides.**

Ecological Significance

- **Coastal protection:** Salt marsh vegetation reduces wave energy, traps sediments and helps prevent coastal erosion and flooding.
- **Biodiversity conservation:** They provide feeding, breeding and nursery habitats for fish, crustaceans, molluscs and migratory birds.
- **Blue carbon sequestration:** Salt marshes capture atmospheric carbon dioxide through plant growth and store carbon in waterlogged soils, where decomposition is often slow.
- **Water purification:** They trap sediments and help remove excess nutrients and certain pollutants from runoff before they enter coastal waters.

Source: TH

K9 VAJRA

In News

- The Ministry of Defence granted in-principle approval for the procurement of more than 300 additional **K9 Vajra-T self-propelled howitzers** at an estimated cost of over 20,000 crore.

What is the K9 Vajra?

- The K9 Vajra-T howitzer is an **Indian version of South Korea's K9 Thunder.**
- It is a 155 mm, 52-calibre tracked self-propelled howitzer manufactured under the 'Make in India' initiative by Larsen & Toubro (L&T) in Hazira, Gujarat, in partnership with Hanwha Aerospace, the Korean counterpart.
 - ♦ A howitzer is an artillery gun that fires explosive shells over long distances, including at high angles to hit targets behind obstacles.
- It carries its gun on an armoured, tracked chassis.
- It helps the gun move with artillery formations, fire at enemy positions, and relocate quickly to reduce its exposure to retaliatory fire.

Specifications

The system has a reported firing range of around 40 km, extendable to approximately 50 km with certain ammunition.

Specification	Detail
Calibre	155 mm/52-calibre
Firing range	Around 40 km; up to 50 km with extended-range projectiles
Rate of fire	Up to 6-8 rounds per minute in burst mode
Maximum road speed	Around 67 kmph
Crew	Five personnel
Weight	Around 50 tonnes
Type	Tracked, self-propelled howitzer

- It can travel at speeds of up to 67 km per hour on roads and houses a crew of five.
- It can fire three rounds in less than 15 seconds.
- Its all-welded steel hull protects the crew against shell fragments, landmines and small-arms fire.
- It can also turn within its own footprint using brake-torquing, allowing it to maneuver in confined spaces.

Source: [BS](#)

