Improving Farmers' Welfare

For Prelims: Parliamentary Standing Committee, Demands for Grants, Minimum Support Price , PM-KISAN Scheme, Pradhan Mantri Jan Arogya Yojana, National Commission for Minimum Living Wages for Farm Labourers, Food Security, Public Distribution System, NABARD, Rules of Procedure and Conduct of Business in Lok Sabha, **MGNREGA, M.S. Swaminathan Commission.**

For Mains: Agricultural distress: Reasons, Impacts and way forward.

Source: IE

Why in News?

Recently, the **Parliamentary Standing Committee (PSC) on Agriculture, Animal Husbandry and Food Processing** tabled its first report on **demands for grants (2024-25)** of the Ministry of Agriculture and Farmers Welfare in the **18th Lok Sabha**.

- It recommended a slew of measures to **improve farmers' welfare.**

What are the Key Recommendations of the PSC Report?

- **Legal Guarantee of MSP:** It recommended providing a **legal guarantee** on **Minimum Support Price (MSP).**
  - Develop a **roadmap** for implementing the legal MSP, ensuring the central government plans finances for a **smooth transition.**
  - The government may present a **post-crop season statement** in Parliament detailing the number of farmers who sold at MSP and the **gap between MSP and market prices.**
- **Paddy Waste Management:** Provide **compensation** to farmers for managing and disposing of crop residue to prevent **stubble burning.**
  - Consider Punjab's proposal for a bonus of **Rs 2,000 per acre,** with cost-sharing between the Centre and the state.
- **Enhancing PM-KISAN:** Double the annual financial assistance under the **PM-KISAN scheme** from **Rs 6,000 to Rs 12,000.**
  - It may be extended to **tenant farmers** and **farm labourers** too.
  - **Debt Relief:** Introduce a **debt waiver scheme** for farmers and farm laborers to mitigate rising distress and suicides.
  - Closely **monitor** the increasing dependence on **loans** and rising **outstanding debts** among rural families.
- **Budgetary Allocation:** It has pointed to the continuous decline in the budgetary allocation to agriculture as a percentage of the total central plan.
  - Despite higher allocations from 2021-22 to 2024-25, the Central plan outlay share fell from **3.53% in 2020-21 to 2.54% in 2024-25**.
- **Universal Crop Insurance:** The committee proposed **mandatory crop insurance** for small farmers with **up to 2 acres**, modeled after the **Pradhan Mantri Jan Arogya Yojana (PM-JAY)** health insurance scheme.
- **National Commission for Farm Labourers:** Establish a **National Commission for Minimum**

Living Wages for Farm Labourers to address their rights and welfare.
- **Renaming Department:** Rename the Department of Agriculture and Farmers Welfare to the **Department of Agriculture, Farmers, and Farm Labourers Welfare** to highlight the focus on agricultural laborers' welfare.

Note: Vice-President **Jagdeep Dhankhar** dismissed the claim that higher MSP would lead to inflation, stating, **"Whatever price we offer to farmers, the nation will benefit five times more, without a doubt."**

PSC on Agriculture, Animal Husbandry and Food Processing

- **About:** PSC on Agriculture, Animal Husbandry and Food Processing assist Parliament in **reviewing and overseeing policies, legislation, and issues** related to agriculture, animal husbandry, and food processing industries.
  - It is constituted under **Rule 331C of the Rules of Procedure and Conduct of Business in Lok Sabha.**
- **Jurisdiction:** It is mandated with the task of **scrutiny and oversight** of the working of the following Ministries/Departments of the Government of India:
  - **Ministry of Agriculture and Farmers Welfare**
    - Department of Agriculture and Farmers Welfare
    - Department of Agricultural Research and Education
  - **Ministry of Fisheries, Animal Husbandry and Dairying**
    - Department of Animal Husbandry and Dairying
    - Department of Fisheries
  - **Ministry of Food Processing Industries**
  - **Ministry of Cooperation**
- **Composition:** It has **31 members: 21 from Lok Sabha,** nominated by the Speaker, and **10 from Rajya Sabha**, nominated by the Chairman.
  - The **Chairperson** of the Committee is **appointed by the Speaker** from amongst the members of the Committee from Lok Sabha.
- **Tenure of Members:** The term of office of the members of the Committee **does not exceed one year.**

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MINIMUM SUPPORT PRICE (MSP)

The rate at which the govt. purchases crops from farmers; based on a calculation of at least **1.5x** the cost of production incurred by the farmers

RECOMMENDED BY

Commission for Agricultural Costs & Prices (CACP) (recommends MSPs for 22 mandated crops and Fair and Remunerative Price for Sugarcane)

22 MANDATED CROPS

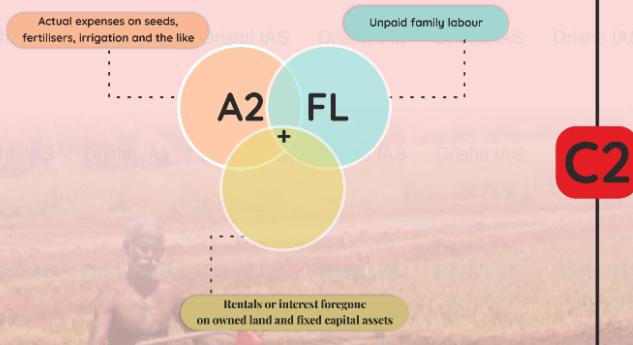(14 Kharif, 6 Rabi and 2 Other Commercial crops)

7 CEREALS — Paddy, Wheat, Barley, Jowar, Bajra, Maize And Ragi

5 PULSES — Gram, Arhar/tur, Moong, Urad And Lentil

7 OILSEEDS — Groundnut, Rapeseed/mustard, Soyabean, Sunflower, Sesamum, Safflower And Niger Seed

RAW COTTON   RAW JUTE   COPRA

MSP is the price at which the govt. is supposed to procure the mandated crops from farmers if the market price falls below it

FACTORS FOR RECOMMENDING MSP

- Cost of cultivation
- Demand-Supply situation for the crop
- Market price trends
- Inter-crop price parity
- Implications for consumers (inflation)
- Environment (soil and water use)
- Terms of trade b/w agri and non-agri sectors (ratio of farm inputs and outputs)

Considers both A2+FL and C2 costs

Actual expenses on seeds, fertilisers, irrigation and the like

Unpaid family labour

A2 + **FL**

C2

Rentals or interest foregone on owned land and fixed capital assets

MSP has no statutory backing — a farmer cannot demand MSP as a matter of right

Drishti IAS

What is the Significance of PSC's Recommendations on Farmers' Welfare?

- **Financial Stability:** A legally binding MSP would ensure **financial stability** for farmers, **reduce suicides,** mitigate market volatility, alleviate debt burdens, and improve overall mental health among farmers.
- **Food Security:** A legally guaranteed MSP aligns with broader national **food security** objectives by ensuring that foodgrains are available at stable prices, thus aiding **public distribution systems**.
- **Environmental Sustainability:** Providing **compensation** to farmers to buy equipment to manage stubble burning will have a positive impact on the environment.
  - Crop residue burning worsens **winter air pollution** in Northern India as many farmers cannot afford effective crop residue management equipment.
- **Inclusivity in Welfare:** Renaming the Department of Agriculture to include "Farm Labourers" reflects a broader focus on the **welfare of all stakeholders in agriculture**, not just land-owning farmers.

Demands for Grants

- **Constitutional Basis**: **Article 113** of the Indian Constitution mandates that the expenditure estimates from the **Consolidated Fund of India**, other than those charged on it, must be submitted to the **Lok Sabha** in the form of **Demands for Grants**.
  - Charged expenditures are presented for informational purposes but are not subject to a vote.
- **Purpose**: Demands for Grants are presented for **approval by the Lok Sabha** for expenditure on various services, covering both **Revenue and Capital Accounts** (including Loans).
- **One Demand per Ministry/Department**: Normally, **one Demand** is presented for **each Ministry/Department.**
  - However, for large Ministries/Departments, more than one Demand may be presented.
- **Inclusion of Charged Expenditure**: If any part of the **expenditure is 'charged'** on the Consolidated Fund, it is **shown distinctly** in italics in the **Demand for Grants**.
  - However, this portion is not subject to a vote.

What are the Key Issues Affecting Farmers?

- **Unmet Promise of MSP:** Farmers are demanding a **statutory MSP at 1.5 times** the comprehensive **cost of production (C2+50%)** which remains unfulfilled.
  - Without a guaranteed MSP at the recommended rate, farmers continue to **face financial instability,** contributing to rising distress and suicides.
- **Rising Cost of Production:** Prices for **fertilizers, seeds, insecticides, diesel, water, and electricity** are consistently rising, putting a strain on farmers' profitability.
- **Debt Burden:**The **NABARD** **Rural Financial Inclusion for 2022-23** said that the percentage of rural families taking loans has risen from **47.4% in 2016-17 to 52% in 2021-22.**
  - It also found rural household **incomes rose by 57.6%** (2016-22), but **expenses grew 69.4%**, indicating expenses are outpacing income growth
- **Decline in Public Investment:** Cuts in public sector investment in irrigation and power have led to **rising costs and incomplete projects**, hindering farmers' access to reliable irrigation and affordable electricity.
  - Additionally, the **Pradhan Mantri Fasal Bima Yojana (PMFBY)** has not sufficiently met farmers' needs, with many states opting out due to its alleged focus on benefiting insurance companies over farmers.

- **Declining Agricultural Growth:** Agriculture's **growth rate** in 2023-24 (provisional estimates) declined to **1.4%**, the lowest in the last seven years, compared to the average annual growth rate of **4.18% over the past four years.**
- **Underfunded MGNREGA:** The current government has been accused of **underfunding the MGNREGA** due to which the number of work days has **come down to just 42.**
    - **Non availability of MGNREGA** work during non-agricultural seasons poses a **threat to farmers livelihood.**
- **Land Acquisition:** There is growing concern over the perceived shift from **"Land to the Tiller" to "Land to Corporates,"** often bypassing the **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.**
    - Tribal lands are being taken away without any compensation for mining and other purposes.

Way Forward

- **Statutory MSP at C2+50%:** The government should make a **clear commitment** to implement a **statutory MSP at C2+50%** as recommended by the **M.S. Swaminathan Commission.**
- **One-Time Loan Waiver:** A one-time loan waiver would provide **immediate relief** to farmers, prevent suicides, and allow reinvestment in agriculture.
- **Revamping Crop Insurance:** In light of regular **droughts, floods, unseasonal rains and hailstorms,** there must be a **comprehensive crop insurance scheme**, different from the PMFBY.
- **Expanding MGNREGA:** Increase in funding for MGNREGA, raising the number of workdays to at **least 200** and the **daily wages to Rs 600** would help rural households maintain a stable income during lean agricultural periods.
- **Progressive Taxation:** Income tax slabs should be revised to help raise the **necessary resources** to fund agrarian reforms.
- **Revisiting Agricultural Policies:** The government must **revise policies that favor corporate interests over farmers**, focusing on the welfare of farmers, farm workers, and rural communities.

Drishti Mains Question:

Q. Discuss the key policy changes needed to ensure inclusive growth in the agriculture sector and reduce farmer suicides.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Consider the following statements: (2020)

1. In the case of all cereals, pulses and oil-seeds, the procurement at Minimum Support Price (MSP) is unlimited in any State/UT of India.
2. In the case of cereals and pulses, the MSP is fixed in any State/UT at a level to which the market price will never rise.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (d)

Q. Consider the following: (2018)

1. Areca nut
2. Barley
3. Coffee
4. Finger millet
5. Groundnut
6. Sesamum
7. Turmeric

The Cabinet Committee on Economic Affairs has announced the Minimum Support Price for which of the above?

(a) 1, 2, 3 and 7 only

(b) 2, 4, 5 and 6 only

(c) 1, 3, 4, 5 and 6 only

(d) 1, 2, 3, 4, 5, 6 and 7

Ans: (b)

Mains

Q. What are the major factors responsible for making the rice-wheat system a success? In spite of this success, how has this system become bane in India? (2020)

Q. What do you mean by Minimum Support Price (MSP)? How will MSP rescue the farmers from the low income trap? (2018)

Q. What are the different types of agriculture subsidies given to farmers at the national and at state levels? Critically, analyse the agricultural subsidy regime with reference to the distortions created by it. (2013)

India Maritime Heritage Conclave 2024

For Prelims: **National Maritime Heritage Complex**, **Indus Valley civilization**, **Royal Indian Navy**, **Navy Day**, **Sagar Mala Program**

For Mains: India's Maritime History and Contributions to Global Trade, Challenges in India's Maritime Sector, India's Maritime Initiatives

Source: PIB

Why in News?

Recently, the **1ˢᵗ India Maritime Heritage Conclave (IMHC 2024)** was organized by the **Ministry of Ports, Shipping and Waterways**, celebrating **India's maritime legacy** and contributions to global trade, while discussing future innovations.

What are the Key Highlights of the IMHC 2024?

- **Theme: *"Towards Understanding India's Position in Global Maritime History."***
  - Focused on India's historical and contemporary contributions to global maritime trade, culture, and innovation.
- **Key Highlights:** stalls at the conclave exhibited India's maritime legacy, showcasing ancient shipbuilding techniques and navigational tools, reflecting India's historical connection to global trade networks.
  - Leading maritime nations like Greece, Italy, and the United Kingdom participated, emphasizing the global significance of India's maritime heritage.
  - A key highlight was the emphasis on the upcoming **National Maritime Heritage Complex (NMHC)** in Lothal, which will showcase India's ancient maritime techniques, such as shipbuilding and bead-making.

National Maritime Heritage Complex (NMHC)

- The **NMHC** is being built in **Lothal, Gujarat**, a historic **Indus Valley civilization(IVC)** site, under the **Ministry of Ports, Shipping, and Waterways**.
  - The NMHC project aims to become **one of the world's largest maritime complexes,** integrating past, present, and future maritime activities into a world-class

facility.

- The NMHC project will feature a museum with 14 galleries, Lothal Town, an Open Aquatic Gallery, Lighthouse Museum, Coastal State Pavilions, eco resorts, theme parks, and a maritime research institute.

What is India's Maritime History?

- **Ancient India:**
    - **Indus Valley Civilization (IVC) (3300-1300 BCE) :** The origins of India's maritime activities can be traced to the **IVC**.
        - **Lothal's dry-dock (2400 BC)** is the **world's first known dry-dock,** reflecting advanced nautical knowledge.

- Evidence indicates robust trade between the **Indus Valley and Mesopotamia.**
  - The discovery of **Harappan seals and jewelry in Mesopotamia** underscores this extensive exchange between the two ancient civilizations.
- **Vedic Era (1500 - 600 BC): Vedic literature**, including the Rig Veda, mentions boats and sea voyages, with Varuna, the Lord of the Sea, guiding maritime routes.
  - The **Ramayana** and **Mahabharata** describe shipbuilding and sea travel.
- **Nandas and Mauryas (500 – 200 BC):** The **Magadh kingdom's** navy is the first ever recorded instance of a navy anywhere in the world.
  - **Chanakya,** the advisor to the first Mauryan emperor, **Chandragupta Maurya,** detailed a waterways department led by a *Navadhyaksha (Superintendent of Ships)* in his **Arthashastra.**
  - **Emperor Ashoka** used maritime routes to spread **Buddhism** to Southeast Asia and Sri Lanka, further enriching India's cultural and religious influence.
- **Satavahana Dynasty (200 BC-220 AD):** The **Satavahanas** controlled India's East coast, trading with the Roman Empire.
  - They were the **first native Indian rulers to issue coins inscribed with ships.**
- **Gupta Empire (320-550 AD):** The **Gupta Dynasty** marked India's Golden Age, with prosperity, cultural growth, and advancements in astronomy and navigation, as noted by Chinese travelers **Fa-Hien** and **Huein Tsang**.
  - Astronomical advancements by **Aryabhata and Varahamihira** improved oceanic navigation, enabling precise voyages. The opening of several ports revived maritime trade with Europe and Africa.
- **Southern Dynasties:**
  - **Cholas (3rd–13th century):** Extensive maritime trade with Sumatra, Java, Thailand, China. Built harbors, shipyards, lighthouses.
  - **Pandyas:** Controlled pearl farming and traded with Rome and Egypt.
  - **Cheras (12th Century):** They traded with the **Greeks and Romans,** using monsoon winds to sail from **Tyndis (near Kochi) and Muziris (near Kochi) to Arabian ports**.

- **Medieval India:**
  - **Arabs:** By the **8th century**, Arabs emerged as prominent maritime traders, acting as intermediaries between India, Southeast Asia, and Europe.
    - Their influence marked a shift in the control of **Indian Ocean** trade routes.
  - **Portuguese:** In the **16th century**, **Vasco da Gama (1460–1524)** discovered an oceanic route from Portugal to India; he rounded the **Cape of Good Hope** in Africa to arrive at **Calicut in Kerala in May 1498**.
    - His arrival marked a new chapter in India's maritime history, disrupting the peaceful trade dominated by coastal and seafaring communities from East Africa to Malaysia and the **Indonesian Islands**.
    - The **Zamorins of Calicut,** a major trading port, had flourishing trade over land and sea.
    - The Portuguese sought to monopolize trade by establishing strongholds in **Goa**, and **Cochin.**
  - **European Competition in Indian Waters:** The 17th century witnessed fierce competition among European powers, including the Portuguese, Dutch, French, and British, for dominance over Indian maritime trade.
    - The **British East India Company** gradually gained supremacy by securing trade privileges and leveraging naval power to dominate Indian waters.

- **Pre- Independence:**
  - **Maratha Naval Resistance: Shivaji Maharaj** built a strong navy to counter European and Mughal influence along the western coast. Coastal forts like **Sindhudurg and Vijaydurg** strengthened maritime defenses.
  - **Maritime India Under The British Raj:** The **Royal Indian Marine (RIM)** was formed in 1892 and later renamed **Royal Indian Navy (RIN)** in 1934.
    - During **World Wars I and II,** the RIN played a significant role in escort missions, patrolling, and combined operations in the Middle East, Burma, and the Mediterranean.
    - The British Crown formally renamed the naval force as the **Royal Indian Navy in**

1934, laying the groundwork for its post-independence transformation.

- **Post-Independence Era (1947 – Present):** With independence, the Royal Indian Navy was divided between India and Pakistan. In 1950, the prefix "Royal" was dropped, and the **Indian Navy was established with the Ashoka Lion as its emblem**.
  - The **motto** *Sam no Varunah* **("Be auspicious unto us, Oh Varuna")** reflects the Navy's cultural and historical roots.
    - **Vice Admiral R.D. Katari** became the **first Indian Chief of Naval Staff** in 1958.
  - The Navy played a pivotal role in the 1971 India-Pakistan war. **Navy Day,** celebrated on **4th December since 1972,** honors the success of **Operation Trident**(1971 Indo-Pak war naval actions).
  - The Indian Navy has **three Commands**, each under the control of a **Flag Officer Commanding-in-Chief** namely**, The Western (HQ- Mumbai), Eastern (Visakhapatnam) and Southern Naval Command (Kochi).**
  - Modernization efforts have transformed the **Indian Navy into a blue-water force** with capabilities extending beyond the **Indian Ocean region.**

What is the Significance of India's Maritime Sector?

- **Status of India's Maritime Sector:**
  - India ranks as the **16th largest maritime** country globally.
  - India is the **world's 3rd largest ship** recycler by tonnage, holding a **30% global market share** in ship-breaking with the world's largest ship-breaking facility located in Alang, Gujarat.
- **Economic Importance:** India's maritime sector serves as the backbone of its trade and commerce, **handling around 95% of the country's trade by volume and 70% by value.**
  - Indian ports handle approximately **1,200 million tonnes of cargo annually**, underscoring the sector's economic significance..
  - According to the **World Bank's 2023 Logistic Performance Index (LPI) Report**, India ranks **22nd globally** in the "International Shipments" category, a significant rise from **44th in 2014**.
    - This improvement underscores the **performance of Indian ports, which have outperformed global peers** on operational parameters such as container turnaround time and dwell time.
  - Ports support Exports-Imports, international trade, coastal shipping, and cruise shipping.
  - With the **global blue economy** expected to reach **USD 6 trillion by 2030**, India's maritime sector is set to significantly contribute to the country's rise as the **world's third-largest economy**.

Major Ports in India

- Ports in India are classified as **Major** and **Minor Ports** according to the jurisdiction of the Central and State government as defined under the **Indian Ports Act, 1908** i.e. Major Ports are owned and managed by the Central Government and Minor ports are owned and managed by the State Governments.
- The **Major Port Authorities Act, 2021** provides for regulation, operation and planning of major ports in India and provide greater autonomy to these ports. It replaced the Major Port Trusts Act, 1963.
- There are **12 major ports. 13th Major Port** (under construction) is **Vadhavan port, Maharashtra.**

What are the Key Challenges in India's Maritime Sector?

- **Port Capacity:** India's ports have a limited capacity to handle the increasing volume of cargo.
  - The Ministry of Ports, Shipping and Waterways reported that despite having **13 major ports** and **over 200 non-major ports**, many are operating at or near full capacity, leading to congestion and delays.
- **Complex Regulations:** The maritime sector encounters challenges from overlapping regulations by bodies such as the **Directorate General of Shipping**, **Maritime States Development Council,** and **United Nations Convention on the Law of the Sea (UNCLOS)**, hindering operational efficiency..
  - Challenges include **illegal fishing, unsustainable resource exploitation**, and the **need for better regulatory implementation** to protect marine habitats and biodiversity.
- **Naval Expansion and Indigenisation:** While India aims to build a 175-ship navy by 2035, the **pace of construction and budget constraints** lag behind strategic needs, especially compared to China's rapid shipbuilding.
  - India faces a shortfall in submarines, with **delays in projects like Project 75-I** and the need for indigenous nuclear attack submarines.
- **Coastal Security:** India's vast and porous coastline is vulnerable to illegal landings of arms and

explosives by terror groups and drug syndicates.
- **Notable cases include the [1993 Mumbai blasts](#) and the [26/11 Mumbai terror attack](#),** highlighting significant security gaps.

India's Initiatives Related to Maritime Sector:

- **[Ship Repair and Recycling Mission](#)**
- **[International Maritime Dispute Resolution Centre](#)**
- **[Security and Growth for All in the Region (SAGAR)](#)**
- **[Sagar Mala Program](#)**
- **[Maritime India Vision 2030](#)**
- **[Maritime Amrit Kaal Vision 2047](#)**

Way Forward

- **Promoting Maritime Tourism:** Developing **coastal tourism initiatives** like **Development of Coastal Circuits** under **[Swadesh Darshan Scheme](#)** of the **Ministry of Tourism** can enhance local economies while preserving cultural heritage.
  - India is advancing its blue economy by focusing on sustainable ocean resource use to drive economic growth and job creation.
- **Enhancing Skill Development:** Establishing **training programs in maritime skills** can empower local communities and create job opportunities.
  - Collaborating with **[international maritime institutions](#)** can facilitate knowledge transfer and innovation.
- **Green Shipping Practices:** India is dedicated to sustainable maritime operations, exemplified by the **[Green Tug Transition Program](#)** and **[Green Hydrogen Hubs](#)** at key ports.
  - Developing **smart ports** and **eco-friendly tugboats** is key to India's maritime vision, enhancing efficiency and reducing the industry's environmental impact.
- **Infrastructure Development:** Invest in **upgrading ports and shipping infrastructure** to boost efficiency and capacity, while also improving connectivity between coastal areas and inland markets to enhance trade.
  - The visionary **[Sagar Mala programme](#)** integrates **ports with industrial clusters**, optimizes logistics networks, and promotes comprehensive coastal development.
- **Policy Framework:** Formulate **integrated policies** that combine maritime heritage preservation with **economic development objectives**, while ensuring compliance with international maritime laws and agreements to foster global cooperation.
  - The **[Coastal Shipping Bill 2024](#)** streamlines regulatory frameworks and enhances multi-modal trade connectivity.

Drishti Mains Question

Analyze the significance of India's maritime heritage as highlighted in the India Maritime Heritage Conclave 2024.

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q1. Which one of the following ancient towns is well known for its elaborate system of water harvesting and management by building a series of dams and channelizing water into connected reservoirs? (2021)

(a) Dholavira

(b) Kalibangan

(c) Rakhigarhi

(d) Ropar

Ans: (a)

Q2. Which of the following characterizes/characterize the people of Indus Civilization? (2013)

1. They possessed great palaces and temples.
2. They worshipped both male and female deities.
3. They employed horse-drawn chariots in warfare.

Select the correct statement/statements using the codes given below:

(a) 1 and 2 only

(b) 2 only

(c) 1, 2 and 3

(d) None of the statements given above is correct

Ans: (b)

Q3. Which one of the following is not a Harappan site? (2019)

(a) Chanhudaro

(b) Kot Diji

(c) Sohgaura

(d) Desalpur

Ans: (c)

Mains

Q.With respect to the South China sea, maritime territorial disputes and rising tension affirm the need for safeguarding maritime security to ensure freedom of navigation and overflight throughout the region. In this context, discuss the bilateral issues between India and China. **(2014)**

SIPRI Report on Global Arms Producers

For Prelims: Hindustan Aeronautics Limited, **Bharat Electronics Limited**, **Mazagon Dock Shipbuilders Ltd**, **Gaza**, **Ukraine**, **BrahMos**, **ASEAN**, **Akash Air Defence Missile System**, **Pinaka**, **FDI**, **Defence Acquisition Procedure (DAP)-2020**, **Positive Indigenization List**, **Innovations for Defence Excellence (iDEX) Scheme**, **Micro, Small, and Medium Enterprises (MSMEs)**, **Defence Industrial Corridors**.
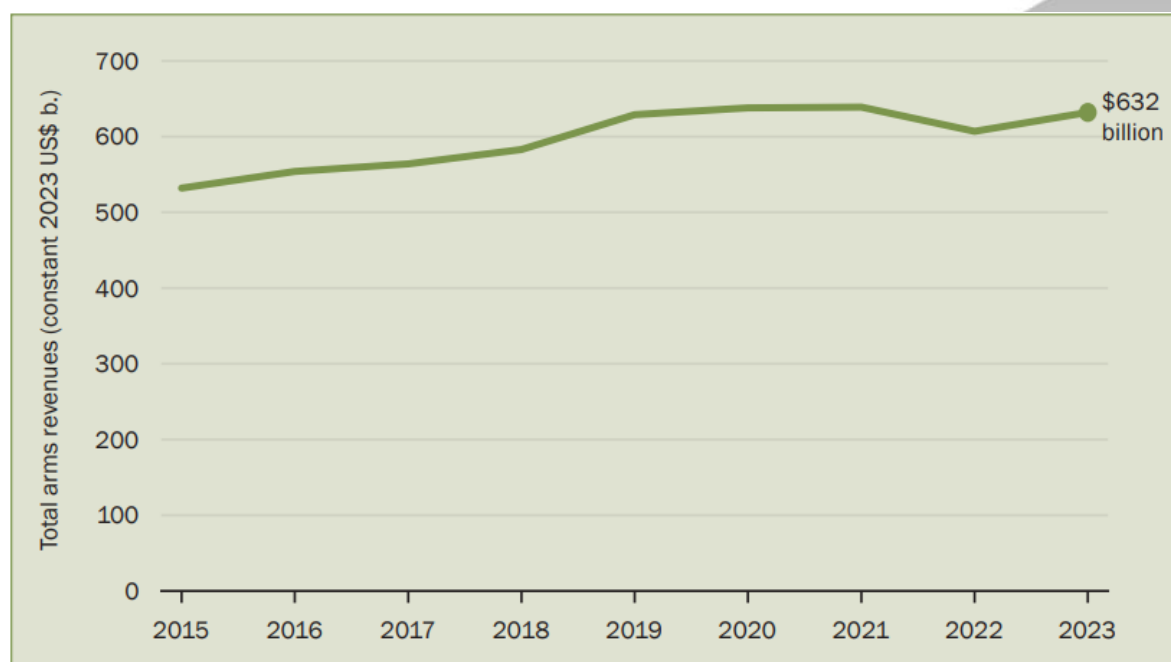
Why in News?

Recently, the **Stockholm International Peace Research Institute (SIPRI)** released its annual report on the **world's 100 largest arms producers** with **three Indian firms** among the top global arms manufacturers.

What are the Key Findings of the SIPRI Report?

- **Global Arms Revenue:** Global arms revenues reached **USD 632 billion in 2023, a 4.2% rise** driven by wars, regional tensions, and rearmament.

- **Performance of Indian Companies:** Three Indian companies namely **Hindustan Aeronautics Limited** (Rank 43), **Bharat Electronics Limited** (Rank 67), and **Mazagon Dock Shipbuilders Ltd** (Rank 94) ranked among the Top 100 global arms producers.
  - The combined revenues of these companies rose by **5.8%**, from USD **6.37 billion in 2022** to **USD 6.74 billion (Rs 56,769 crore) in 2023**.
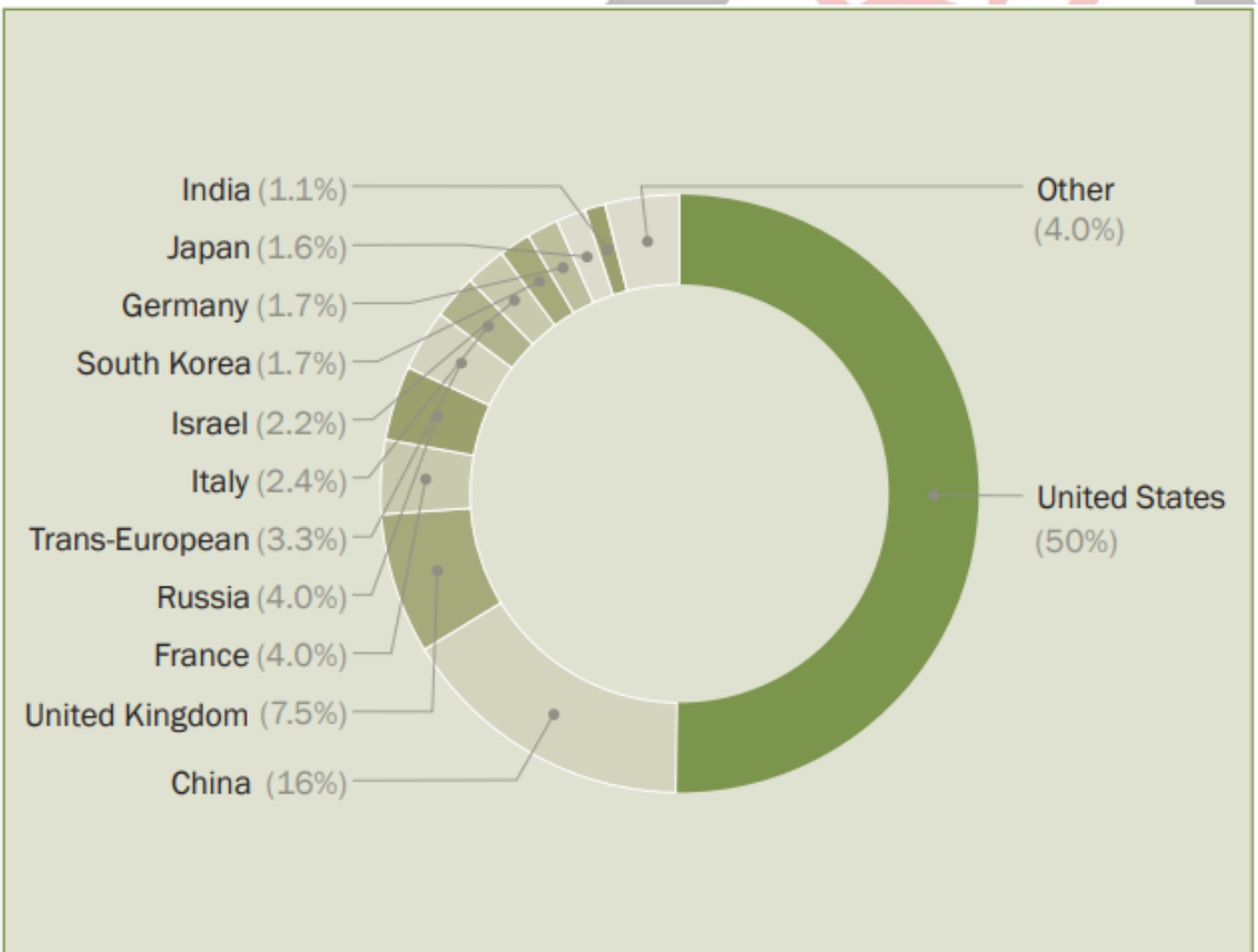
TOP LINE CHECK Sipri top 100 arms companies 2023

Rank 2022	Rank 2023	Company	Country	Arms revenue 2023 ($ bn)	Change (%)
1	1	Lockheed Martin	US	60.81	−1.6
2	2	RTX	US	40.66	−1.3
3	3	Northrop Grumman	US	35.57	5.8
4	4	Boeing	US	31.1	2.0
5	5	General Dynamics	US	30.2	3.2
43	43	Hindustan Aeronautics	India	3.71	6.9
65	67	Bharat Electronics	India	1.94	0.5
96	94	Mazagon Dock Shipbuilders	India	1.09	12.4

Note: Revenue figures are in billion of constant (2023) US dollars

Source: Sipri

- **Major Global Producers:**
  - **US:** The **41 US companies in the Top 100** earned USD 317 billion in 2023, **half of global arms revenues**, with the **top five** producers being **US-based.**
  - **China:** The **nine Chinese companies** in the Top 100 recorded a total revenue of USD **103 billion** in 2023.
  - **Russia:** The arms revenues of the **two Russian companies** for which data was available went up by **40%** to an estimated **USD 25.5 billion** due to a significant increase in orders and production.

India (1.1%)
Japan (1.6%)
Germany (1.7%)
South Korea (1.7%)
Israel (2.2%)
Italy (2.4%)
Trans-European (3.3%)
Russia (4.0%)
France (4.0%)
United Kingdom (7.5%)
China (16%)
Other (4.0%)
United States (50%)

- **Regional Highlights:** Growth in arms revenue was seen in **all regions** of the world, with

particularly sharp rises among companies based in **Russia and the [Middle East](#) (West Asia).**

- **Reasons for Arms Revenue Growth:** Increased demand was driven by **wars in [Gaza](#) and [Ukraine](#)**, growing tensions in **East Asia,** and expanded **rearmament programs** globally.
  - Smaller arms producers were **more efficient** in responding to increased demand from conflict zones.
- **Outlook for 2024:** Arms revenues rose in 2023 and are expected to grow in 2024. Companies are **recruiting more**, showing optimism about future sales.

Note: Arms revenues refer to **revenues generated** from the sales of military goods and services to military customers **domestically and abroad.**

Stockholm International Peace Research Institute (SIPRI)

- **SIPRI** is an **independent** international institute dedicated to research into **conflict, armaments, arms control and disarmament.**
- Established in **1966**, SIPRI provides **data, analysis and recommendations**, based on **open sources,** to policymakers, researchers, media and the interested public.

What are Key Items in India's Defence Exports?

- **BrahMos Missiles:** India delivered the first batch of [**BrahMos**](#) supersonic cruise missiles to the **Philippines,** following a **USD 375-million deal** for three shore-based, anti-ship missile batteries.
  - [**ASEAN**](#) countries and some **Gulf nations** are showing increasing interest in acquiring **BrahMos missiles**.
- **Dornier-228 Aircraft:** India exports the [**Dornier-228 aircraft**](#), a versatile and reliable aircraft for defense and civilian applications to various countries.
- **Subsidiary Aircraft Parts:** India exports **subsidiary aircraft parts** like **fuselage** and **wings** to defense giants such as **Boeing** and **Lockheed Martin** as part of the global supply chain and offset commitments.
- **Software and Electronic Equipment:** India exports **software** and **electronic equipment** for defense applications to **France**.
- **155mm Artillery Guns:** India has been exporting **155mm artillery guns** to countries like **Armenia**, highlighting its capabilities in producing advanced artillery systems.
- **Akash Missile System:** The [**Akash air defence missile system**](#), including its variant **Akash-1S**, has been a major export, with **Armenia** being the first international customer.
- **Pinaka:** [**Pinaka**](#) **multi-launch rocket systems** have been exported, with **Armenia** being a significant buyer.

India's Achievements

- **Arms Production:** India's annual defence production hit a record high of almost **Rs 1.27 trillion in FY24**, up **16.7%** over the previous year's figure of **about Rs 1.09 trillion**.
  - It shows India's defence ecosystem has **covered over 40%** of the ambitious annual defence production target of **Rs 3 trillion by FY29**.
- **Expansion of Arms Production:** Apart from the **16 DPSUs**, India's defence-industrial base has also expanded to over **430 licenced companies and 16,000 micro, small and medium enterprises**.
  - The private sector accounts for **21% of this expansion** in arms production capacity.
- **Export Destinations:** Currently, India exports to **over 100 nations**, with the **top three** destinations for defence exports in 2023-24 being the **USA, France, and Armenia**.

What are India's Initiatives to Boost Defence Indigenisation and Exports?

- **Liberalized FDI Policy: FDI limit** in the defence sector was raised in 2020 to **74%** through the **automatic route** for companies seeking new **defence industrial licenses** and up to **100%** through the **government route** for those likely to result in access to modern technology.
- **Priority for Domestic Procurement:** Emphasis is placed on procuring capital items from domestic sources under the **Defence Acquisition Procedure (DAP)-2020**.
- **Positive Indigenization Lists:** Five **Positive Indigenization Lists** with **509 items** and five lists of **5,012 items** from Defence Public Sector Undertakings (DPSUs) were issued, with **import bans** after specified timelines.
  - Additionally, launch of the **Self-Reliant Initiatives through Joint Action (SRIJAN) portal** to facilitate indigenization by Indian industry, including MSMEs.
- **iDEX Scheme:** The **Innovations for Defence Excellence (iDEX) scheme** was launched to involve startups and **Micro, Small, and Medium Enterprises (MSMEs)** in defence innovation.
- **Public Procurement Preference:** Implementation of the **Public Procurement (Preference to Make in India) Order 2017** to support domestic manufacturers.
- **Defence Industrial Corridors:** Establishment of **two Defence Industrial Corridors**, one each in **Uttar Pradesh and Tamil Nadu**, to promote defence manufacturing.
  - Defence Research & Development (R&D) has been opened up for **industry and startups** to foster innovation and collaboration.

Conclusion

India's defence sector has made significant strides in **indigenization**, with key initiatives driving growth in **production and exports**. The rise in **arms revenues** globally, coupled with India's **growing share** in the global defence market, reflects the success of strategic policies aimed at enhancing self-reliance and international partnerships.

> ***Drishti Mains Question:***
>
> Q. Enumerate various government initiatives for promoting indigenous defense production.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Which one of the following is the best description of 'INS Astradharini', that was in the news recently? (2016)

(a) Amphibious warfare ship

(b) Nuclear-powered submarine

(c) Torpedo launch and recovery vessel

(d) Nuclear-powered aircraft carrier

Ans: (c)

Mains

Q. What is the significance of Indo-US defense deals over Indo-Russian defense deals? Discuss with reference to stability in the Indo-Pacific region. (2020)

Q. Foreign Direct Investment (FDI) in the defense sector is now set to be liberalized: What influence is this

expected to have on Indian defense and economy in the short and long run? (2014)

Rising Drug Abuse Among Youth

For Prelims: **United Nations Office on Drugs and Crime (UNODC), World Drug Report 2024, Cannabis, NDPS Act, NCB,** National Fund for Control of Drug Abuse, **National Action Plan for Drug Demand Reduction**

For Mains: Drug: Challenges, Initiatives, Problem of drug abuse and related Initiatives.

Source: HT

Why in News?

The **Supreme Court of India** has expressed concern over the rising drug abuse among youth, calling it a generational threat.

- This concern emerged during a verdict supporting the **National Investigation Agency's (NIA)** probe into a heroin smuggling case linked to Pakistan.
- The court emphasized the **need for urgent collective action** from families, society, and state authorities to address the growing menace of drug abuse.

What is the State of Drug Abuse in the World?

- **Global Scenario:**
    - As per the **World Drug Report 2024** released by the **United Nations Office on Drugs and Crime (UNODC)**, global drug use reached **292 million** people, marking a **20% increase** over the past decade.
    - **Drug Preferences**: **Cannabis** remains the most widely used drug (**228 million users**), followed by opioids (**60 million**), amphetamines (**30 million**), cocaine (**23 million**), and ecstasy (**20 million**).
    - **Emerging Threats**: The report flags **netizens**, a new class of synthetic opioids, as a significant threat, more potent than fentanyl, contributing to rising overdose deaths, especially in high-income countries.
        - **Fentanyl** is an opioid drug used as an **analgesic (pain relief) and anesthetic**
    - **Treatment Gap**: Only **1 in 11** people with **64 million** drug use disorders receive treatment.
        - Women face greater barriers, with only **1 in 18 women** with drug use disorders receiving treatment, compared to **1 in 7 men**.
- **Drug Prevalence in India:**
    - **Drug Addiction:**
        - Drug addiction is on the rise, with approximately **100 million people** in India affected by various narcotics according to the **Narcotics Control Bureau (NCB)**.
            - States like **Uttar Pradesh**, **Maharashtra**, and **Punjab** recorded the highest number of FIRs under the **Narcotic Drugs and Psychotropic Substances Act (NDPS)** between 2019 and 2021.
    - **Alcohol**: According to the **National Survey on Extent and Pattern of Substance Use in India (2019)**, conducted by the Ministry of Social Justice and Empowerment, **16 crore** people (14.6%) between ages 10 and 75 are current alcohol users. Of

these, **5.2%** are **alcohol dependents (alcoholism).**
- **Alcoholism** is a **chronic disease** that causes people to crave alcohol and be unable to control their drinking.
  - **Cannabis**: **3.1 crore** people (2.8%) are cannabis users, with **72 lakh** (0.66%) facing cannabis-related issues.
  - **Opioid Use**: **2.06%** of the population uses opioids, and nearly **0.55%** (60 lakh) require treatment services for opioid dependence.
  - **Sedative**: **1.18 crore** (1.08%) individuals use sedatives for non-medical purposes.
  - **Inhalant**: Inhalant abuse affects **1.7% of children and adolescents**, significantly higher than the **0.58% prevalence in adults**. Approximately **18 lakh children** require assistance to address inhalant abuse.
  - **Injecting Drug Use**: Approximately **8.5 lakh** people inject drugs, known as **People Who Inject Drugs (PWID).**

Major Drug-Producing Regions:

- **Golden Crescent**: Comprising Afghanistan, Iran, and Pakistan, it remains a primary hub for opium production, impacting Indian states such as **Jammu and Kashmir**, **Punjab**, **Himachal Pradesh**, **Rajasthan**, and **Gujarat**.
- **Golden Triangle**: Located at the intersection of **Laos**, **Myanmar**, and **Thailand**, this region is notorious for heroin production, with **Myanmar** producing **80%** of the world's heroin. Trafficking routes pass through Laos, Vietnam, Thailand, and India.

What are Different Drug Types and Substances?

Drug Type	Characteristics
Stimulants	- Stimulants stimulate the central nervous system, increasing alertness and physical activity. They can cause mood swings, insomnia, irregular heartbeat, and anxiety. **Examples:** Cocaine, Crack, Amphetamines, and inhalants like Amyl or Butyl Nitrites.
Depressants	Depressants, such as alcohol, barbiturates, and tranquilizers, slow

	• down the **central nervous system**, causing relaxation. • Alcohol abuse can lead to **slurred speech, memory loss, and in severe cases, unconsciousness or death**. • **Examples:** Barbiturates and tranquilizers
Hallucinogens	• Hallucinogens **alter perception, causing emotional swings, paranoia, delusions, and confusion**. Though not physically addictive, they can lead to lasting psychological harm. • Examples: LSD, Ecstasy, Psilocybin (magic mushrooms).
Dissociative Drugs	• Dissociative drugs cause **detachment from the body and environment,** impairing motor functions and causing confusion. • **Examples:** Ketamine, DXM (Dextromethorphan).
Opioids	• These are **highly addictive and induce pain relief and euphoria**. • **Examples:** Heroin, Opium, Pharmaceutical painkillers (e.g., codeine, morphine).
Inhalants	• Inhalants can cause headaches, nausea, loss of coordination, and in severe cases, suffocation or death. • **Examples:** Gasoline, Paint Thinners, Amyl Nitrite.
Cannabis	• Cannabis, derived from the ***Cannabis sativa* plant**, is commonly used in forms like **marijuana, hashish, and hash oil**. • Its abuse impairs **memory, concentration, and can lead to paranoia, addiction**, and long-term **cognitive issues.** • **Examples:** Marijuana, Hashish, Hash Oil.

What are the Factors Contributing to Drug Abuse in India?

- **Peer Influence**: The desire to fit in with friends and gain social approval often leads to experimentation with drugs, especially in high school and college environments.
- **Academic Stress and Mental Health Issues**: Pressure to excel academically, coupled with high competition, can cause stress, anxiety, and depression.
  - Some youth use drugs as a coping mechanism for managing these pressures.
- **Cultural Norms and Media Influence**: The glamorisation of drug use in **media, movies, and music often normalizes substance abuse** among young people, making it appear trendy or acceptable.
  - The **limited role of state authorities and local governments** in addressing drug abuse has contributed to the rise of substance use in India.

- **Socio Economic Factors**: Poverty, unemployment, and limited access to educational and recreational resources increase the likelihood of **substance abuse as young people** turn to drugs as a form of escape or coping mechanism.
- **Family Environment**: Dysfunctional family dynamics, **parental substance abuse,** and lack of emotional support often **correlate with higher rates of youth drug use**.
  - A supportive family environment can mitigate these risks.
- **Legal System Loopholes: Organized crime** syndicates exploit legal system loopholes, such as weak border controls, to smuggle drugs. They often misuse trade routes from Africa and South Asia for drug trafficking purposes.
  - In 2023, the **Border Security Force** reported a 35% increase in drug seizures along the India-Pakistan border, highlighting the ongoing challenges in controlling illicit drug flows through these routes.
- **Easy Availability:** Easy drug availability, particularly due to **smuggling in Punjab,** has led to widespread abuse.
  - Around **15.4%** of Punjab's population uses narcotics, with **over 3 million people affected** as per a 2022 study by Post Graduate Institute of Medical Education and Research (PGIMER).
- **Fear of Strict laws**: Strict laws like the **NDPS Act** can **discourage families from disclosing drug abuse** due to **fear of prosecution, hindering efforts for rehabilitation**.
  - This not only prevents individuals from seeking help but also allows the illegal drug supply chain to continue, contributing to the rise of drug abuse in India.

What are the Government Measures to Tackle Drug Abuse in India?

- **Legislative Measures**:
  - **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**: It r**egulates the production, manufacture, and trafficking of narcotic drugs** and **psychotropic substances**.
  - **Drugs and Cosmetics Act, 1940** and **Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances (PITNDPS) Act, 1988** govern the legal framework for **controlling and preventing** drug trafficking and abuse.
- **Institutional Measures**:
  - **National Investigation Agency's (NIA)**: It is the **Central Counter Terrorism Law Enforcement Agency** in India.
    - It plays a crucial role in **tackling drug trafficking**, particularly when it involves national security concerns.
    - It investigates cases with **inter-State and international links**, including **drug smuggling networks tied** to **terrorism, arms trafficking, and cross-border infiltration**.
    - It coordinates with other agencies to **disrupt transnational drug trade, seize illicit shipments, and dismantle organized criminal** syndicates involved in trafficking.
  - **National Narcotics Control Bureau (NCB)**:
    - **NCB** is a **nodal drug law enforcement and intelligence agency** of India. It coordinates with national and international agencies, and participates in initiatives such as the **SAARC Drug Offences Monitoring Desk (SDOMD)**.
  - **Other Enforcement Agencies**: The **Directorate of Revenue Intelligence (DRI),** **Customs Department,** and various law enforcement agencies work together to curb **drug trafficking.**
- **Preventive and Rehabilitation Measures**:
  - **National Action Plan for Drug Demand Reduction (NAPDDR)**: The **NAPDDR** plan focuses on reducing the demand for drugs through awareness campaigns, capacity-building programs, de-addiction, and rehabilitation services.
  - **Nasha Mukt Bharat Abhiyan (NMBA)**: **NMBA** was launched to raise awareness about the harmful effects of drugs, especially among school children.
  - **NIDAAN and NCORD Portals**: **NIDAAN and NCORD Portals** are online platforms that maintain detailed databases of drug offenders, supporting law enforcement agencies in tracking drug-related crimes and trends.
- **Specific Initiatives**:

- **Project Sunrise (2016)**:
  - **Project Sunrise** is addressing the rising HIV prevalence among drugs injecting people in the northeastern states.
- **Nasha Mukt Bharat**:
  - **Nasha Mukt Bharat** is a nationwide campaign focusing on community outreach to prevent drug use and its social consequences.
- **Seizure Information Management System (SIMS)**:
  - **SIMS portal** was developed by the NCB to **track drug offenses and offenders** through an online database.
- **De-addiction Centers**:
  - Institutions like the **National Drug Dependence Treatment Centre (NDDTC)** at AIIMS, and state-run centers offering counseling, medical treatment, and social reintegration for addicts.

Way Forward

- **Strengthening and Reform Existing Laws:** Enhance the implementation of the **NDPS and PITNDPS Acts** through better training, resources, and modern technology.
  - The **NDPS Act needs to be revisited** to **integrate rehabilitation** alongside punitive measures, strengthening enforcement, and **improving coordination between local, state and central authorities**.
- **Integrated Policy Approach:** The government should develop **integrated policies** that address the **root causes of drug abuse**, incorporating health, education, and social welfare sectors.
  - Continued research is necessary to **monitor drug trends and the effectiveness** of intervention programs, allowing for **data-driven policy adjustments.**
- **De-addiction Centres and Camps:** Establishing **district-level de-addiction centers** and organizing **rehabilitation camps** by government agencies can provide crucial support to affected individuals.
  - **Post-care counseling and rehabilitation** efforts are essential for l**ong-term recovery** and preventing relapses.
- **Education and Awareness:** Schools should include **drug education in their curricula,** teaching students about the risks and consequences of substance abuse from an early age.
  - Civil society and religious leaders can significantly contribute to preventing drug abuse through **awareness programs in schools and communities**, promoting healthy choices and **engaging role models** like athletes and actors.
- **International Cooperation: Strengthen ties** with neighboring countries and international organizations such as **UNODC** and **Interpol** for effective **information sharing and counter-trafficking measures**.
- **Use of Technology:** Utilize **AI, Big Data, and drones** to track drug trafficking networks and monitor illicit drug cultivation areas. Establish online reporting systems for drug-related activities.

Conclusion

Article 47 of the Constitution calls for the improvement of public health and the prohibition of harmful substances. To effectively address the drug menace, India requires stronger regulations, enhanced laws, and improved coordination among states. Formulating a comprehensive national policy focused on prevention, rehabilitation, and stringent enforcement is essential.

Drishti Mains Question:

Discuss the issue of drug abuse in India. Suggest some measures to tackle the issue of drug abuse.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Golan Heights

Source: DD

Why in News?

The **Golan Heights** has become a focal point of international attention as Israel announces plans to double its population in the strategically important region.
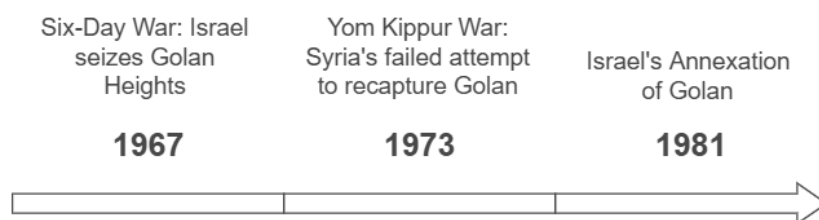
What are Key Facts About Golan Heights?

- **Geography:** The Golan Heights is a **1,200-square-kilometre** rocky plateau in southwestern Syria, overlooking the **Jordan River Valley.**
  - The name "Golan" is derived from the **biblical city of refuge**, Golan in Bashan, which is mentioned in the Bible.
  - The Golan is bounded by **Mount Hermon (north),** the **Yarmūk River(south),** the **Jordan River and Sea of Galilee (west)**, and the **seasonal Wadi Al-Ruqqād (east).**
  - The area is a key source of water for an arid region. Rainwater from the Golan's catchment feeds into the **Jordan River.**
- **Historical Context:** Israel captured most of the Golan Heights from Syria in the **1967 Six-Day War.** Syria's attempt to retake it during the 1973 war failed.
  - In 1974, Israel and Syria signed the **Agreement on Disengagement,** which established a ceasefire following the **Yom Kippur War.**
    - This agreement led to the creation of the **United Nations Disengagement Observer Force (UNDOF)** to monitor the ceasefire line in the Golan Heights.
  - Israel annexed the region in **1981**, a move not recognized internationally, though the **US acknowledged Israeli sovereignty in 2019**. Syria still demands its return.
- **Military Presence:** The area remains divided by a **United Nations-monitored demilitarized zone (DMZ),** with Israeli and Syrian forces separated by the **"Area of Separation,"** a buffer zone created under the **1974 Agreement.**
- **Military Significance:** The Golan Heights is considered a vital **security buffer zone.** Israel's military presence in the area serves as a deterrent against potential threats from Syria and other regional actors.
  - The plateau's elevated position allows Israel to monitor movements in both **Syria and Lebanon.**

Key Events Regarding Golan Heights

Six-Day War: Israel seizes Golan Heights	Yom Kippur War: Syria's failed attempt to recapture Golan	Israel's Annexation of Golan
1967	**1973**	**1981**

Note: In December 2024, India voted in favor of the **United Nations General Assembly (UNGA)** resolution demanding **Israel's withdrawal from the occupied Syrian Golan Heights.**

- The resolution stressed the illegality of Israeli settlement construction and other activities in the occupied Syrian Golan since 1967.

Read more: Conflict between Israel and Syria

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q1. Consider the following pairs: (2018)

	Towns sometimes mentioned in news	Country
1.	Aleppo	Syria
2.	Kirkuk	Yemen
3.	Mosul	Palestine
4.	Mazar-i-sharif	Afghanistan

Which of the pairs given above are correctly matched?

(a) 1 and 2
(b) 1 and 4
(c) 2 and 3
(d) 3 and 4

Ans: (b)

Q2. Which one of the following countries of South-West Asia does not open out to the Mediterranean Sea? (2015)

(a) Syria
(b) Jordan
(c) Lebanon
(d) Israel

Ans: (b)

Q3. The area known as 'Golan Heights' sometimes appears in the news in the context of the events related to (2015)

(a) Central Asia
(b) Middle East
(c) South-East Asia
(d) Central Africa

Ans: (b)

Q4. Yom Kippur War was fought between which sides/ countries? (2008)

(a) Turkey and Greece
(b) Serbs and Croats
(c) Israel, and Arab countries led by Egypt and Syria
(d) Iran and Iraq

Ans: (c)

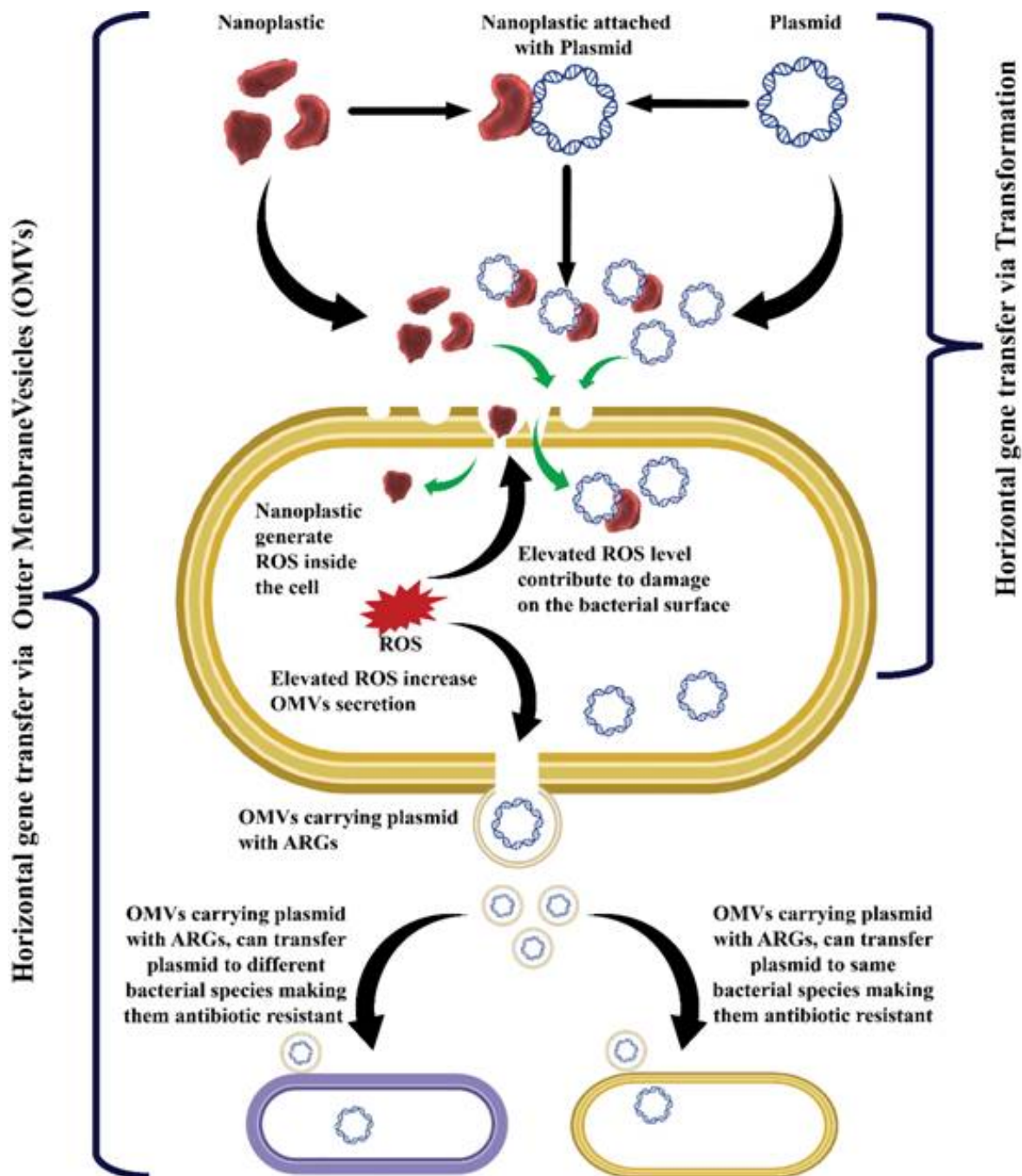# Nanoplastics Causing Antibiotic Resistance

Source: PIB

Why in News?

Recently, a study revealed that **nanoplastics** derived from **single-use plastic bottles (SUPBs)** contribute to the spread of **antibiotic resistance (AR)**, presenting an overlooked public health risk.

- Antibiotic resistance, **a type of antimicrobial resistance**, occurs when **bacteria evolve** to **resist** the effects of **drugs** that once killed them or inhibited their growth.

What are Key Highlights of the Study?

- **Risk to Gut Microbiome**: Nanoplastics could transform **Lactobacillus acidophilus (gut microbiota) into a carrier of AR genes**, which may then be transferred to pathogenic bacteria during infections, thus worsening the AR crisis.
- **Horizontal Gene Transfer (HGT)**: Polyethylene terephthalate bottle-derived nanoplastics (PBNPs) **facilitate** the transfer of AR genes from **E. coli to Lactobacillus acidophilus** through **horizontal gene transfer (HGT).**
  - In HGT, genes are **passed directly from one organism to another**, potentially across different species. (Vertical gene transfer, from parent to offspring).
- **Two Mechanisms of AR Gene Transfer**:
  - **Direct Transformation Pathway**: PBNPs act as **physical carriers**, transporting AR plasmids across bacterial membranes and promoting direct gene transfer.
  - **OMV-Induced Transfer Pathway**: PBNPs induce **oxidative stress**, triggering increased **outer membrane vesicle (OMV) secretion**.
    - These OMVs, carrying AR genes, **facilitate gene transfer** between bacterial species, including between beneficial and pathogenic bacteria.
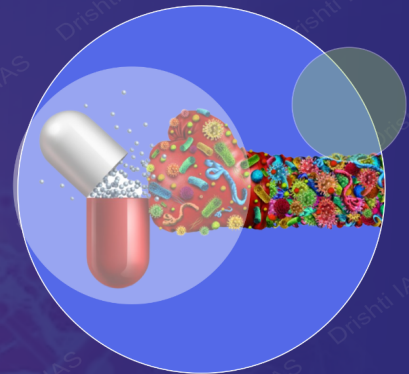- **AR Gene Transfer Mechanism:**

What Are Nanoplastics?

- **Definition**: Nanoplastics are **solid particles** of **synthetic or heavily modified natural polymers** with sizes ranging between **1 nm and 1000 nm.**
- **Types:**
    - **Primary Nanoplastics**: These are **intentionally produced** nanoplastics, typically for specific applications.
    - **Secondary Nanoplastics**: The majority of nanoplastics in the environment are secondary, meaning they **result from the fragmentation of larger plastic** items released unintentionally into the environment.
- **Concerns with Nanoplastics**:
    - **Environmental Presence:** Disrupts **marine food chains** and **ecosystems**.
    - **Bioaccumulation**: Harmful effects on health.
    - **Toxicity**: Inflammation, and disruptions in normal **cellular processes.**
    - **Gut Microbiome Disruption**: Digestive problems, **immune dysfunction**, or an increased risk of infections.

ANTIMICROBIAL RESISTANCE

Drishti IAS

The ability of microorganisms to resist the effects of antimicrobial drugs

CAUSES OF ↑AMR

- Poor infection control/sanitation
- Antibiotic overuse
- Genetic mutations of microbe
- Lack of investment in R&D of new antimicrobial drugs

Microbes that develop AMR are called 'Superbugs'

IMPACTS OF AMR

- ↑ Risk of spreading infections
- Makes infections harder to treat; prolonged illness
- ↑ Healthcare costs

EXAMPLE

- Carbapenem antibiotics stop responding due to AMR in K. pneumoniae
- AMR Mycobacterium tuberculosis causing Rifampicin-Resistant TB (RR-TB)
- Drug-resistant HIV (HIVDR) making antiretroviral (ARV) drugs ineffective

RECOGNITION BY WHO

- Identified AMR as **one of the top 10 threats** to global health
- Launched **GLASS** (Global Antimicrobial Resistanceand Use Surveillance System) in 2015

INDIA'S INITIATIVES AGAINST AMR

- Surveillance of AMR in microbes causing **TB, Vector Borne diseases, AIDS etc.**
- **National Action Plan on AMR** (2017) with One Health approach
- **Antibiotic Stewardship Program** by ICMR

New Delhi metallo-β-lactamase-1 (NDM-1) is a bacterial enzyme, emerged from India, that renders all current β-lactam antibiotics inactive

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UPSC Civil Services Examination, Previous Year Questions (PYQ)

Prelims

Q. Which of the following are the reasons for the occurrence of multi-drug resistance in microbial pathogens in India? (2019)

1. Genetic predisposition of some people
2. Taking incorrect doses of antibiotics to cure diseases
3. Using antibiotics in livestock farming
4. Multiple chronic diseases in some people

Select the correct answer using the code given below.

(a) 1 and 2

(b) 2 and 3 only

(c) 1, 3 and 4

(d) 2, 3 and 4

Ans: (b)

Pangolin

Source: DTE

Nigerian authorities seized approximately 2.18 tonnes of **pangolin scales**, a significant milestone in the ongoing efforts to combat **pangolin trafficking.**

- Pangolins are the most trafficked **mammals,** with high demand for their **meat and scales** in Asia and Africa, primarily for use in traditional medicine to treat ailments like rheumatism, arthritis, and skin conditions.
- **Pangolins Species:** There are eight species of pangolins, found across two continents:
    - **Africa: Black-bellied pangolin**, **White-bellied pangolin**, **Giant Ground pangolin** and **Temminck's Ground pangolin**.
    - **Asia: Indian pangolin *(Manis crassicaudata)*, Chinese pangolin** (Manis pentadactyla), **Philippine pangolin**, and the **Sunda pangolin**.
- **Characteristics:** Pangolins are **solitary, nocturnal animals** with a distinctive armor of scales. Also known as **scaly anteaters,** they primarily feed on ants and termites.
- **Conservation Status:** The conservation status of these species ranges from **Vulnerable to Critically Endangered.**
    - Trade of pangolins is banned under the **Convention on International Trade in Endangered Species** and they are listed in **Appendix I** of the **IUCN Red List,** indicating they are threatened with extinction.
    - In India, the **Indian** (endangered on IUCN Red List) **and Chinese pangolins are listed under Schedule I of the Wildlife (Protection) Act, 1972,** prohibiting exploitation.

Read more: [Pangolin](#)

INS Nirdeshak

The **[Indian Navy](#)** has commissioned INS Nirdeshak, a state-of-the-art survey vessel, at Visakhapatnam Naval Dockyard.

- **About:** INS Nirdeshak, the second ship of the **Survey Vessels (Large) (SVL) Project,** has been commissioned to enhance **[hydrographic surveys](#)**, navigation, and maritime safety using advanced systems like Multi-Beam Echo Sounders, and Autonomous Underwater Vehicles (AUVs).
    - The SVL Project aims to modernize the Indian Navy's hydrographic survey fleet by replacing the aging Sandhayak class ships. The project comprises four ships; **they are [Sandhayak](#), Nirdeshak, [Ikshak,](#) and [Sanshodhak.](#)**
- **Indigenous Manufacturing:** Built with over **80% indigenous content,** the project supports the government's **[Make in India](#)** and **[Atma Nirbhar Bharat](#)** initiatives.
- **Maritime Diplomacy and Security:** The ship will act as a **credible tool for maritime diplomacy**, assisting friendly nations in oceanic surveys, which supports India's **[SAGAR (Security and Growth for All in the Region)](#)** initiative.
    - It enhances India's leadership in the **[Indian Ocean Region](#)** by improving maritime security.
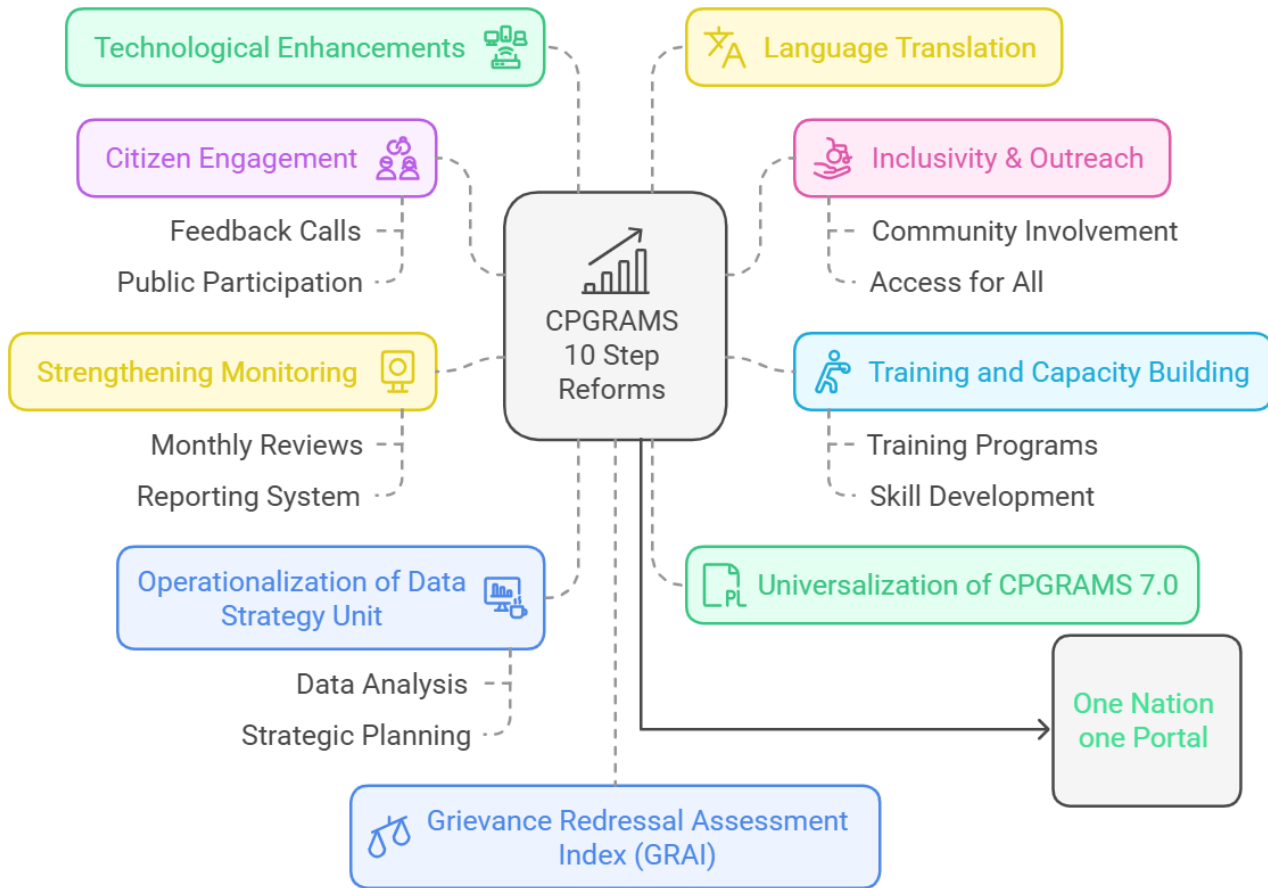
Read more: [Sandhayak](#)

Centralized Public Grievance Redress and Monitoring System

[Source: PIB](#)

Recently, the Ministry of Personnel, Public Grievances & Pensions highlighted the progress made under the **[Centralized Public Grievance Redress and Monitoring System (CPGRAMS)](#)** to enhance the efficiency of **grievance redressal mechanisms.**

- CPGRAMS is a 24/7 online platform developed by **[National Informatics Centre](#),** for citizens to **lodge grievances related to service delivery**. It connects all Ministries/Departments of the Government of India and states, with role-based access.
  - Citizens can track grievance status using a registration ID and file an appeal if dissatisfied with the resolution.
  - As of 31st October 2024, around **1.12 crore grievances have been redressed on CPGRAMS** from 2020 to 2024. In 2024, an all-time high of 23.24 lakh grievances were addressed.
  - The government has implemented **10-step reforms** to make grievance redressal more efficient, including **mapping over one lakh grievance officers and reducing pendency to 54,339 grievances.**

Read more: **[Speedy Grievances Redressal under CPGRAMS](#)**

VIRAASAT

[Source: PIB](#)

The **Ministry of Textiles** is organizing the **third edition** of the **VIRAASAT Sari Festival 2024** from **15th–28th December** in New Delhi.

- This mega event **promotes India's handloom heritage** by showcasing diverse handwoven saris and providing direct market access to weavers and artisans.
- **About India's Handloom Sector:**
    - The handloom sector employs around **3.5 million people**, making it the **second-largest employment sector after agriculture,** particularly women.
    - It is known for its **unique regional weaves** like **Paithani, Kancheepuram, Banarasi, Patola**, and others, each with distinct designs and motifs that attract global attention.
- **Government Initiatives for Handloom Sector:**
    - **[National Handloom Development Programme (NHDP)](#)**
    - **[Raw Material Supply Scheme (RMSS)](#)**
    - **[Weavers' MUDRA Loan/Concessional Credit Scheme](#)**
    - **[Handloom Producer Companies](#)**
    - **[Design Resource Centers (DRCs)](#)**

- **One District One Product**

Read More: [Reforms in Handloom Sector](#).