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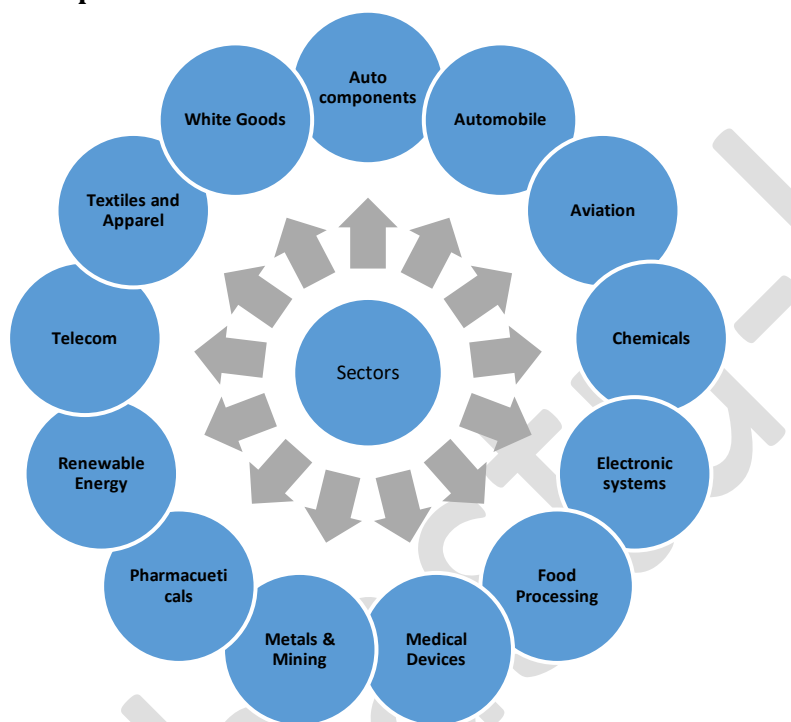
Production Linked Incentive Scheme

News: The PLI Schemes have led to a significant increase in production, employment generation, economic growth and exports in the country.

What is PLI Scheme?

- The PLI scheme gives financial incentives/rewards based on their production and sales. Its main objective is to scale up domestic manufacturing capability, make our goods competitive globally and create more jobs.
- The incentives are calculated based on incremental sales. They range from 1% to 20% depending on the industry.

Which sectors encompass the PLI scheme?



What are the achievements of the PLI Scheme?

Increase in Exports

- Under the PLI scheme, sectors such as electronics, automobiles, pharmaceuticals, white goods, and textiles have witnessed significant growth in exports.
- Also, PLI Schemes have transformed India's export basket from traditional commodities to high-value-added products.

Higher FDI

- 76% increase in FDI in the Manufacturing sector in FY 2021-22 compared to the previous year; Drugs and Pharmaceuticals (+46%), Food Processing Industries (+26%) and Medical Appliances (+91%).

Value Addition

- It was noted that 20% value addition was achieved in mobile manufacturing within a period of 3 years. Whereas countries like Vietnam achieved 18% value addition over 15 years and China achieved 49% value addition over 25 years.

Job Creation

- The drone manufacturing sector alone is expected to create more than 10,000 direct jobs, while the textile sector is estimated to create over 7.5 lakh additional jobs.

Import Substitution

- Import substitution of 60% has been achieved in the Telecom sector and India has become almost self-reliant in Antennae, GPON (Gigabit Passive Optical Network) & CPE (Customer Premises Equipment).

Drones

- Drones sector has seen a 7 times jump in turnover due to the PLI Scheme which consists of all MSME Startups.

Food Processing

- Under the PLI Scheme for Food Processing, the sourcing of raw materials from India has seen a significant increase which has positively impacted the income of Indian farmers and MSMEs.

What are the concerns about the PLI scheme?

- Distortion in the allocation of resources due to focus on selected sectors. Some sectors would get preference over others.
- PLI scheme may create industries that are dependent on government subsidies for their survival. These industries may not be competitive without ongoing government support.
- Fiscal responsibility and burden on the government.
- Concerns over whether it will attract high-quality investments that can lead to technology transfers and improvements in productivity.
- In 2022-23, the government paid Rs. 2,874 crore to beneficiaries against a claim of Rs. 3,420 crore in various sectors.
- In the electric auto industry, firms are looking for clarity on the incentives they are supposed to receive. In 2022-23, incentives could not be disbursed because no auto company presented the required documents.

What should be the way forward?

- Invest in more efficient logistics and infrastructure that will boost the manufacturing sector perspective.
- Improve ease of doing business at the ground level as much as is seen in various rankings.
- Access to affordable capital and financing for manufacturers.
- Evaluate existing free trade agreements (FTAs) to ensure they benefit the domestic manufacturing sector. Also, consider engaging in FTAs that provide Indian manufacturers with access to global markets.

Note - To know more about the PLI scheme we recommend you to check the following link <https://www.investindia.gov.in/production-linked-incentives-schemes-india>

Global DPI Summit

News: Global DPI Summit and Global DPI Exhibition were inaugurated by the Ministry of State in Electronics and IT and MSDE.

What is DPI?

- DPI (Digital Public Infrastructure) refers to the technological framework and systems that enable digital transformation and provide essential digital services to the public.
- It includes various components such as digital identity (e.g., Aadhar), digital payments (e.g., UPI), data exchange, and other digital solutions that contribute to improving governance, inclusivity, and efficiency in public services.

Key Highlights:

- India has signed MoUs signed with Armenia, Sierra Leone, and Suriname to share India's digital solutions (India Stack).
- Focus on DPI's role in facilitating fast and inclusive digital payments as well as bridging the financial divide through DPI.
- The importance of digital identities such as Aadhaar (India) and PhilSys (Philippines) was highlighted.
- Implementation of DPI in judicial systems e.g., e-court systems, e-filing, paperless courts, and live streaming.
- A draft Public Key Infrastructure (PKI) Mutual Recognition Framework has been released by the Ministry of Electronics & IT for the adoption of India's DPI beyond India.

Hiroshima AI Process

News: The 2023 annual G7 Summit, hosted by Japan (Hiroshima), initiated the Hiroshima AI Process (HAP) – an effort to determine a way forward to regulate artificial intelligence (AI).

What is HAP?

- The HAP aims to facilitate international discussions on **inclusive AI governance** and **interoperability** to achieve a common vision and goal of trustworthy AI.
- It recognizes the growing prominence of Generative AI (GAI) across countries and sectors and emphasizes the need to address the opportunities and challenges associated with it.
- The HAP will operate in cooperation with international organizations such as the **Organisation for Economic Co-operation and Development (OECD)** and the **Global Partnership on AI (GPAI)**.

Significance of HAP:

- The discussions could include topics such as governance, safeguarding of IPR (including copyrights), response to foreign information manipulation (including disinformation) and responsible utilisation of these technologies.
- It will highlight the shared values and standards that can be used to derive guiding principles (fairness, accountability, transparency, and safety) for the regulation of AI.
- AI development and implementation will help in aligning with values such as freedom, democracy and human rights.
- An emphasis on multi-stakeholder international cooperation indicates that the HAP isn't expected to address AI regulation from a State-centric perspective.

Challenges:

- The HAP faces challenges due to differing approaches among G7 countries in regulating AI risks.
- G7 countries are acting on their own instead of waiting for the outcomes from the HAP.
- Currently, there is ambiguity regarding the relationship between AI and IPR (Intellectual Property Rights), leading to conflicting interpretations and legal decisions in different jurisdictions.

Way Forward

- A common guideline for G7 countries that permits the use of copyrighted materials.
- An interoperable AI governance framework to respond to the concerns of other country groups as well.
- Like-minded approaches and policy instruments to achieve the common vision and goal of trustworthy AI.

Global AI Regulations:

Country	Initiatives
India	Niti Aayog – National Strategy for Artificial Intelligence and the Responsible AI for All report.
USA	Blueprint for AI Bill of Rights
China	In 2022, China came out with some of the world's first nationally binding regulations targeting specific types of algorithms and AI.
European Union	In May 2023, the European Parliament reached a Preliminary Agreement on a new draft of the Artificial Intelligence Act, which aims to regulate systems like OpenAI's ChatGPT.
Canada	Artificial Intelligence and Data Act

Wheat in India

News: Recently, the Union Government has imposed limits on the stock of wheat that can be held by traders, wholesalers, retailers, big chain retailers and processors.

What needs were felt for the move?

- **Owing to high heat and Climate affecting crops** - Major wheat producers such as Punjab, Uttar Pradesh, Madhya Pradesh and Haryana experiencing strong thunderstorms with lightning and gusty winds alongside hailstorms, which is affecting the production and quality of wheat crops.
- **To withstand the potential effects of the Upcoming EL Nino year** - As the year 2023-24 has expected to be an EL Nino year, there may be chances of drought and reduced rainfall, affecting agriculture in India.

Wheat Cultivation in India:

- Wheat requires **12°-25°C temperature**. High temperature is harmful to the cultivation of wheat.
- The best wheat is produced in areas favoured with **cool, moist weather** during the major portion of the growing period followed by dry, warm weather to enable the grain to ripen properly.
- **25-100 cm rainfall** is required for wheat cultivation. Excessive rainfall is not suitable as it may cause fungal diseases.
- Wheat can grow on a variety of soils, but **well-drained loamy to clayey soils** are preferred. The soil should be fertile and rich in organic matter. The optimum soil pH is 6.5-8.5.
- **Major wheat-growing states in India** are Uttar Pradesh, Punjab, Haryana, Madhya Pradesh, Rajasthan, Bihar and Gujarat.
- **Important Wheat variety in India** – Sharbati Gehu (Best variety in India), Chandosi Gehu, Pusa Tejas, Pusa Malawi, Pusha Yashaswi.
- **Durum Wheat** - Hard wheat is cultivated in clayey soil and is highly sought after for its physical characteristics. Its high gluten strength and uniform golden colour make it ideal for bread-making and pasta preparation.



Which are the common Fungal diseases affecting Wheat crops?

- Rusts (caused by Puccinia Fungi), Powdery mildew (Fungus Blumeria graminis), Fusarium head blight, Wheat blast, tan spot, Septoria leaf blotch, root rot etc.

Facts for Prelims

Leptospirosis

News: Leptospirosis has emerged as an important infectious disease in the world which tends to have large outbreaks after heavy rainfall or flooding.

About:

- Leptospirosis is a **bacterial disease** that affects humans and animals. It is caused by bacteria of the genus *Leptospira*.
- It can cause a wide range of symptoms, from mild (headaches, muscle pains, and fevers) to severe (bleeding in the lungs or meningitis). It can also lead to kidney damage, liver failure, and death if not treated.
- It is **spread by contact with infected animals or their urine, or contaminated water or soil**.
- Leptospirosis control can benefit from a 'One Health' approach. 'One Health' is an interdisciplinary approach that recognises the interconnections between the health of humans, animals, plants, and their shared environment.

Tissue engineering

News: Recently, **biogenic nanoparticles** have been applied in tissue engineering (TE) to obtain improved mechanical and biological performances.

What is Tissue engineering?

- Tissue engineering is a **biomedical engineering discipline** that uses a combination of **cells, engineering, materials methods, and suitable biochemical and physicochemical factors** to restore, maintain, improve, or replace different types of **biological tissues**.
- Tissue engineering utilizes biocompatible materials, such as scaffolds, and incorporates cells, growth factors, and other bioactive molecules to facilitate tissue regeneration.

What are Biogenic nanoparticles?

- Biogenic nanoparticles are nanostructure materials synthesized through biological processes that have gained significant attention due to their small size and high surface area-to-volume ratio. Biogenic nanoparticles can be produced using various microorganisms, plants, and marine sources.
- Applications of Biogenic nanoparticles – For example, **Biogenic gold nanoparticles** have been used for drug delivery, biosensing, imaging, catalysis, and photothermal therapy.
- **Biogenic copper nanoparticles** have been used for water treatment, antimicrobial, anticancer, and antioxidant activities.
- **Biogenic silver nanoparticles** have shown antimicrobial, anticancer, larvicidal, leishmaniasis, wound healing, antioxidant, and sensor activities.