

**CURRENT EVENTS  
AND  
ANALYSIS  
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# CURRENT EVENTS AND ANALYSIS

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# ECONOMY

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## **BANKING**

### ***Cryptocurrencies:***

#### **Risks in Cryptocurrencies**

- The International Monetary Fund (IMF) in its Global Financial Stability Report released in October 2021 noted that Cryptocurrencies pose financial stability challenges.

#### **What are Cryptocurrencies?**

- Generally, currencies are issued by the Sovereign Governments through their central banks. They are released in physical form and act as a medium of exchange and store of value.
- Cryptocurrencies are **virtual or digital currencies** issued by **private players**. They are **stored only digitally** and can be used as payment for goods and services among those who possess them if both parties are willing.

#### **Major Features of Cryptocurrencies:**

- A cryptocurrency is developed through a code by solving complex mathematical problems by software engineers, mathematicians, and cryptography experts.
- It is released in tokens only in finite number.
- Cryptocurrencies are called so because of the technology used i.e. cryptography (crypto means secret).
- **Transactions between individuals in Bitcoins (peer-to-peer transfers) take place** without the involvement of trusted intermediary like bank. Hence, it is necessary to secure such transactions from errors and fraud. Cryptography ensures secure transactions by using encryption and decryption techniques
- Transactions data is also stored in a **decentralised public ledger** (detailed account of transactions) through the use of Blockchain technology. This enables every participant in the cryptocurrency to see and validate transactions. Here, also there is no need for central agency to validate transactions i.e. centralised ledger.

#### **Rationale Behind the Evolution of Cryptocurrencies:**

Evolution of cryptocurrencies is based on the following premises.

##### **1. Hedge against Inflation:**

Cryptocurrencies have been designed to be free from government manipulation and control.

When Governments resort to printing more money, the value of money gets eroded due to inflation. Cryptocurrencies like Bitcoin act as a hedge against increased demand caused inflation as they are only in finite supply and cannot be increased artificially.

##### **2. Faster and Cheaper Cross Border Payments:**

Cryptocurrencies facilitate faster and cheaper cross border payments when compared with regular banks. Regular transactions through banks are cumbersome and banks charge high fees for transfers.

Recently, El Salvador made Bitcoin, a cryptocurrency, a legal tender to lower the remittance costs as the country depends on remittances significantly. Now El Salvador citizens can send remittances in Bitcoins which are fast and transaction charges are very low when compared with dollar remittance charges.

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### 3. Disciplining effect on Central Banks:

Cryptocurrencies will have disciplining effect on central banks by acting as a competing payment instruments. Governments will be forced think of consequences while printing money to increase the supply.

#### Cryptocurrencies around the world:

- Bitcoin is the foremost cryptocurrency which was released in 2009 and continues to be the most popular cryptocurrency in the world. It was developed by a programmer under a pseudo name Satoshi Nakamoto. At present, Bitcoin has a market capitalisation of more than US \$ 1 trillion.
- Other popular cryptocurrencies are Ethereum, Binance coin, Litecoin, Cardano, Dogecoin, etc.

#### Threats Posed by Cryptocurrencies:

##### 1. Volatile and Speculative Assets:

The use of cryptocurrencies for payments and settlements is still limited around the world. However, these are being **aggressively promoted by crypto exchanges as investment option**. People are also investing in cryptocurrencies with the intension of maximising returns on investments rather than using for payments for goods and services. As a result, there is high speculation and volatility in the prices of cryptocurrencies.

For instance, the price of Bitcoin the value of one Bitcoin was effectively worth \$0 when it was first introduced in 2009. It was traded for free initially between early adopters. But the price of one Bitcoin crossed US \$ 60,000 in March 2021 but fell drastically to US \$ 31,000 in July 2021. Thus there is very high level of volatility in price of Bitcoin. But people are being lured by crypto exchanges with the possibility of high returns and investments are being made without adequate awareness of the risks X involved such as ? X

**Fundamentally**, cryptocurrencies **do not have any intrinsic value**. They are not backed by any asset or by the sovereign guarantee of the Government. For instance, when stocks are purchased, they provide partial ownership of a firm that produces goods and services. Similarly, bonds provide a steady source of income, and gold has inherent metal value. This is not the case with cryptocurrencies which do not have any underlying asset. The price of cryptocurrencies depends upon the trust of the investors and they are traded because there is demand for them.

##### 2. Consumer Protection Risks:

Consumer protection risks are also substantial due to limited or inadequate oversight by Government agencies. For example, more than 16,000 tokens have been listed in various exchanges and around 9,000 exist today, while the rest have disappeared in some form. Developers of these cryptocurrencies have walked away from the project. Some were created solely for speculation purposes or even outright fraud.

X If so, why are they not banned by Governments of countries where they are in use?

##### 3. Scope for Money Laundering and Terrorist Financing:

The anonymity of crypto currencies also creates data gaps for regulators and can open doors for money laundering and terrorist financing.

Although it is possible to trace illicit transactions, it is not possible to identify the parties to such transactions due to anonymity facilitated in crypto transactions.

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#### 4. Impact on effectiveness of Monetary Policy:

Widespread and rapid adoption cryptocurrencies can reduce the ability of central banks to effectively implement monetary policy as Central banks may not be effective in regulating money supply during inflation.

#### 5. Impact on Forex Market:

Increased demand for crypto assets could also facilitate capital outflows that impact the foreign exchange market.

#### Contribution to carbon footprint:

In addition to above **economic risks** there are also **environmental** costs. Cryptocurrencies also contribute to carbon footprint as their generation consumes huge power. Additional tokens of cryptocurrencies are generated by solving complex algorithms. Those who solve these algorithms are rewarded with additional tokens of cryptocurrency. Hence, thousands of developers compete to solve the algorithms as rewards through additional tokens are lucrative. But this process also contributes to huge consumption of energy by computers.

#### Present Dilemma with Cryptocurrencies:

- Due to risks involved in cryptocurrencies, Governments around the world are contemplating on how to deal with cryptocurrencies ecosystem **whether to allow cryptocurrencies with regulation or ban them.**
- There market capitalisation of cryptocurrencies in more than US \$ trillion according to International Monetary Fund.

#### Practice in various countries:

- **China** has **banned** all the cryptocurrencies.
- USA, Canada, Japan, and Thailand allow the use of cryptocurrencies for payments. Canada also collects taxes on crypto transactions.

#### India:

- Currently, there is **no regulation or any ban on the use of cryptocurrencies** in the country.
- In 2018, the Reserve Bank of India's (RBI) banned banks from supporting crypto transactions. But, the Supreme Court lifted the ban in March 2020 stating that there is no law banning cryptocurrencies in India and hence RBI cannot prohibit banks from facilitating crypto currency transactions.

#### Extent of Investments in Cryptocurrencies:

- Cryptocurrency holdings in India are estimated at about Rs. 40,000 crore, held by about 15 million investors.
- Young people are investing in cryptocurrencies lured by the high returns through celebrity advertisements by crypto exchanges. Prime Minister Narendra Modi also expressed concern that cryptocurrencies ecosystem can fall into wrong hands (used for money laundering and terror financing) and can spoil youth and called for developing global governance framework for cryptocurrencies.

#### Stand of RBI on cryptocurrencies:

- RBI is opposed to cryptocurrencies on the ground that these pose a serious **threat to the macroeconomic and financial stability of the country.**
- If a large number of investors invest in digital coins rather than rupee-based savings, it affects **banks ability to mobilise savings and lend out money to its customers.**

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- Moreover, since cryptocurrencies are unregulated in the country and are difficult to trace, the government will also not be able to collect tax. Cryptocurrencies can be used in money laundering and illegal activities. Cryptocurrencies are also susceptible to hacking. Investors in cryptocurrencies are susceptible to losses as cryptocurrencies are volatile in nature.
  - However, in the face of the proliferation of cryptocurrencies, the RBI announced its intent to come out with an **official digital currency**.

### **INFRASTRUCTURE:**

### **PM Gati Shakti - National Master Plan for Multi-Modal Connectivity- Launched**

- Prime Minister Narendra Modi launched 'Gati Shakti - National Master Plan for Multi-modal connectivity' in October 2021 which will bring together 16 Ministries including Railways and Roadways **on a single digital platform for integrated planning and coordinated implementation of infrastructure connectivity projects to promote multi-modal connectivity**.
- Gati Shakti will aid the Government in efficient implementation of recently launched **National Infrastructure Pipeline** under which the Government is spending more than **Rs.100 lakh crores**.
- 'Gati' means **speed** and 'Shakti' means **energy or power** in Hindi. The aim of the master plan is to **combine and channelise speed and energy of the Government departments** for speedy and efficient execution of infrastructure projects and ensure **seamless connectivity** between rail, road, ports and civil aviation.

### **Background:**

#### **What prompted the Government to Launch Gati Shakti?**

##### **1. Lack of coordination:**

There is no proper coordination in the implementation of infrastructure projects in the country. Most of the times various ministries like Roadways, Railways, implement infrastructure projects in silos (standalone basis).

##### **2. Wastage of public expenditure:**

Lack of coordination also leads to wastage of public money. For instance, once a road is laid, it is dug up again for activities like laying of underground cables, gas pipelines, etc.

##### **3. Poor planning of projects leading to High Logistics Costs:**

Infrastructure projects are poorly planned and executed. For instance, ports were set up. But they were not served by efficient road and rail connectivity for long time.

Likewise, many economic zones, industrial parks, logistics hubs and ports were set up, but they often suffered owing to **inefficient multi-modal connectivity**, and also **due to their small size**.

As a result, the **logistics costs** (transportation cost of goods) are high in India (about 13 % of GDP) which contributes to higher cost of goods and **loss of competitiveness of exports** from India.

### **Objectives of Gati Shakti:**

The objectives Gati Shakti National Master Plan are to

- a) lower of logistics costs in the country,
- b) improve Ease of Doing Business,
- c) improve cost competitiveness of Indian exports,
- d) create more jobs, and
- e) achieve the goal of US \$ 5 trillion economy

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## What will be done under Gati Shakti?

### Centralised Digital Portal:

An online portal would be launched that would integrate the existing portal and data of key infrastructure ministries. It will provide real-time access to information and data on various infrastructure projects and help in better coordination among ministries.

Each ministry and government department will be able to access information about the ongoing and upcoming projects for a balanced and synchronised approach. It will bring together under one ambit the government departments like railways, roads and highways, Shipping, Civil Aviation, Railways, Communications, Natural Gas, etc.

The following are the salient features of Gati Shakti:

#### 1. Common Vision:

Instead of planning & designing separately in silos, projects will be designed and executed with a common vision under a National Master Plan to ensure multi-modal connectivity.

In a multi-modal connectivity, roads would feed into railway lines which in turn would feed into ports.

#### 2. Prioritisation:

Projects will be prioritised through cross-sectoral interactions among departments.

#### 3. Synchronisation:

Infrastructure activities of various ministries (like Roads, Shipping, Civil Aviation, Railways, Communications, Natural Gas, etc) will be synchronised in a holistic manner by ensuring coordination of work between them.

For example, when a land is being acquired by for laying of roads by Ministry of Roads, related ministries would be involved to acquire land needed for laying utility infrastructure along roads like gas pipelines, power cables, optical fibre cables, water pipelines, etc.

Similarly, while setting up industrial parks (textile clusters, pharmaceutical clusters, etc.), State Governments must identify land parcels in consonance with the Gati Shakti National Master Plan.

#### 4. Use of Technology:

Technology will be leveraged in the execution of infrastructure projects like spatial planning tools developed by BiSAG-N (Bhaskaracharya National Institute for Space Applications and Geoinformatics).

### Related information:

#### Significance of Infrastructure:

#### Key enabler of economic growth:

- Infrastructure is a key enabler of economic growth. It has contributed to socio-economic transformation of many countries like USA, Japan, European countries, South Korea, China.
- **USA** invested in infrastructure under the 'New Deal' to recover from Great Depression in 1930's.
- Between 1960-1990, **South Korea** started growing at an average rate of 10 per cent per annum, after it invested into infrastructural development. **China** too adopted the same approach during 1980-2010, ushering socio-economic transformation and became the manufacturing hub of the world.

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### Multiplier Effect:

- This means that not only does the infrastructure project contribute immediately through increased demand for labour, construction materials, but also through the second order effects improved connectivity brings. Goods and people will move faster between destinations. The cost of logistics comes down.
- Studies by the Reserve Bank of India and the National Institute of Public Finance and Policy have estimated the multiplier to be between 2.5-3.5. This means, for every rupee spent by the government in creating infrastructure, GDP gains worth Rs. 2.5-3.5 accrue.

### **RBI Allows Foreign Portfolio Investors to Invest in Debt Securities Issued by REITs and InvITs**

- In an effort to further open up fund raising avenues for Real Estate Investment Trusts (REITs) and **Infrastructure Investment Trusts (InvITs)**, the Reserve Bank of India, in October 2021, allowed **Foreign Portfolio Investors (FPIs)** to invest in debt securities issued by REITs and InvITs
- The **RBI** amended the **Foreign Exchange Management Regulations** to allow FPIs investments in debt securities issued by REITs and InvITs.
- Securities and Exchange Board of India, Capital market regulator, had amended the regulations governing REITs and InvITs in December 2017 to provide for issuance of listed debt securities by them.
- The Insurance Regulatory and Development Authority of India (IRDAI) has allowed insurers to invest in debt securities issued by InvITs and real estate investment trusts (REITs).
- However, due to lack of enabling provisions under the foreign exchange regulations by the RBI, these business trusts were unable to source debt funding from FPIs so far.
- Allowing FPI investments in REITs and InvITs will enable them to raise debt at **competitive rates** from foreign investors and also lead to **wider participation** by institutional investors.
- Currently, there are 11 InvITs and REITs in India. Combined assets under management (AUM) of InvITs and REITs are Rs. 2 lakh crore now. They are expected to mobilise around Rs. 8 lakh crore in the next five years.

### What are REITs and InvITs?

- The Government of India launched InvITs and REITs to **bring in long term capital into the country** and **to increase private participation in infrastructure and real estate**.
- REITs (Real Estate Investment Trusts) and InvITs (Infrastructure Investment Trusts) are popular in developed countries but are relatively new investment instruments in the Indian market. Institutional investors form the backbone of these trusts.
- **Conceptually**, REITs and InvITs are like mutual funds, where a sponsor raises capital from individual and institutional investors and invests them in real estate projects and infrastructure projects.
- Investors receive periodic pay-outs of a minimum of 90% of net distributable cash flows (NDCF) which are generated from investments in REITs and InvITs. These payouts are made at least once every six months for publicly offered REITs and InvITs and once a year for privately placed InvITs.
- REITs and InvITs are governed by **SEBI regulations**.
- While InvITs can be public listed, private listed or private unlisted, REITs are required to be publicly listed.

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- REITs and InvITs can raise funds by way of Initial Public Offering (IPO), Private Placement (PP), preferential allotment, qualified institutional placement, rights issue, bonus issue, and offer for sale.

### **What are the Advantages of REITs and InvITs for Stakeholders?**

#### **1. For Developers of real estate projects and infrastructure projects:**

These trusts allow developers to monetise revenue-generating real estate and infrastructure assets and use the proceeds to fund new infrastructure/real estate projects.

These trusts also extend finance to under construction projects and help in early completion of the projects.

#### **2. Individual investors**

These provide alternate investment option for retail investors who can invest in these projects through the trusts and earn income. This income is through dividends and interest income distributed by the investment trusts.

These funds are **listed in stock exchange**. So, they also offer **liquidity** (freedom to sell whenever they want) to investors.

REITs and InvITs enjoy **favourable tax treatment**, including exemption from dividend distribution tax and relaxation of capital gains tax.

### **How are Infrastructure Investment Trusts (InvITs) Funds Used?**

- These trusts invest in infrastructure projects like **highways, gas pipelines, roads, power, energy projects, etc.**
- The minimum investment limit for retail investors is Rs. 1 lakh

### **How are Real Estate Investment Trusts (REITs) Funds Used?**

- These are trusts which invest in commercial office buildings, shopping complexes, hotels, malls, hospitals, etc.
- The minimum investment limit for retail investors is Rs. 50,000.

### **Setting up of Infrastructure Investment Trusts (InvITs) and Real Estate Investment Trusts (REITs):**

- These trusts are registered with SEBI and comprise of the following
- Trustee: They should invest at least 80% into infra assets that generate steady revenue.
- Sponsor: Typically, a body corporate, LLP, promoter or a company with a net worth of at least Rs. 100 crores is classified as a sponsor.
- Investment manager: As a body corporate of LLP, an investment manager supervises all the operational activities surrounding InvITs.
- Project manager: The authority is mostly responsible for executing projects. However, in the case of PPP projects, it serves as an entity that also supervises ancillary responsibilities.

### **SOCIAL SECTOR:**

#### **Poverty:**

#### **2021 Global Multidimensional Poverty Index (MPI)**

- 2021 Global Multidimensional Poverty Index (MPI), prepared by United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI), was released in October 2021.
- 1.3 billion people are experiencing multidimensional poverty out of which about half are children.

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- For the first time, the 2021 MPI examined inequalities along the lines of **ethnicity, race, caste and gender** across multidimensionally poor people.
  - **Five out of six multidimensionally poor people in India** are from Scheduled Tribes, Scheduled Castes and Other Backward Class.
  - The MPI was first developed in **2010** and the data is updated at least once per year to include newly available data.
  - Policymakers (Governments) can use MPI data to target resources and design policies more effectively.

#### **Details:**

#### **What is Multidimensional Poverty Index?**

- Poverty is generally measured on the basis of income.
- The Multidimensional Poverty Index (MPI) looks beyond income to understand how people experience poverty in multiple and simultaneous ways (multiple deprivations at the same time).
- The MPI measures both the **incidence** and **intensity** of poverty.  
Incidence of poverty means the **proportion** of people within a given population who experience multiple deprivations. Intensity means the **extent** of deprivation i.e. the average proportion of deprivations they experience.
- MPI takes into account 10 indicators in three key dimensions:
  1. Health (2 indicators : Nutrition, Child mortality)
  2. Education (2 indicators : Years of schooling, School attendance), and
  3. Standard of living (6 indicators : Cooking Fuel, Sanitation, Drinking Water, Electricity, Housing, Assets),
- People who experience deprivation in at least one third of these 10 weighted indicators fall into the category of multidimensionally poor.

#### **Highlights of 2021 Global Multidimensional Poverty Index:**

- The Report covered 109 developing countries (accounting for 5.9 billion people) for which data is available. Other developing countries were not included due to data constraints. The report also does not cover developed countries and studies multidimensional poverty only developing and least developed countries.)
- 21.7 per cent of population in 109 countries live in multidimensional poverty. In absolute terms, it is 1.3 billion people.
- About half 1.3 billion multidimensionally poor are children (644 million) under age 18. One in three children is multidimensionally poor.
- Nearly 85 percent live in Sub-Saharan Africa (556 million) or South Asia (532 million).
- Roughly, 84 percent (1.1 billion) live in rural areas, and 16 percent (about 209 million) live in urban areas.

#### **Ethnicity, race and caste and Multidimensional poverty:**

For the first time, the 2021 MPI examined inequalities along the lines of **ethnicity, race, caste and gender** across multidimensionally poor people. The objective is to highlight the need to address such disparities through policy measures to ensure fair and inclusive development.

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The **2030 Agenda for Sustainable Development** also **pledges to leave no one behind**. So, this data also **monitors progress** towards this goal.

### **1. Caste and Multidimensional Poverty:**

Since castes and tribes are a more prevalent line of social stratification in India, MPI provided data on incidence and intensity of multidimensional poverty among castes and tribes.

**Five out of six multidimensionally poor people in India** are from Scheduled Tribes, Scheduled Castes and Other Backward Class.

Poverty levels were highest among the STs (50.6%), followed by SCs (33.3%), and OBCs (27.2%).

In contrast, the poverty level among the others (those apart from the SCs, STs, and OBCs) was the lowest at 15.6%. That is, poverty levels among the STs were more than thrice that of the other advantaged communities, while the poverty of SCs and OBCs was almost double their levels.

### **2. Ethnicity:**

Inequalities across ethnic groups remain prevalent in multiple countries.

In Latin America, indigenous peoples are among the poorest. For instance, in Bolivia indigenous communities account for about 44 percent of the population but represent 75 percent of multidimensionally poor people.

Similarly, In Lao People's Democratic Republic, Mongolia and Viet Nam ethnic minorities are poorer than majority groups.

#### **Suggestions:**

To reduce differences in poverty levels and rates between ethnic groups

- a) Governments must focus on minorities and indigenous groups who are at risk of being left behind.
- b) Frequent data on ethnicity and group-based deprivations must be collected in order to enable efficient monitoring, reporting and targeting of poverty and inequalities across ethnic groups.

### **3. Gender:**

#### **Education:**

Among the 1.3 billion multidimensionally poor people studied, almost two-thirds (836 million) live in households in which no female member has completed at least six years of schooling. This exclusion of women from education has far-reaching impacts on societies around the world.

Education enables girls to realise their full potential. It is often associated with gains across the household, such as **higher school attendance for children, lower nutritional deprivations and lower child mortality**. But globally, women's education lags behind men's.

So it is essential to use the rich microdata that underlie the MPI to conduct in-depth, gendered and intrahousehold analysis of deprivation patterns.

#### **Suggestion:**

Countries should conduct in-depth, gendered and intrahousehold analysis of deprivation patterns in education and design relevant policies to ensure education for girls.

#### **Risk of Violence:**

Women and girls living in multidimensionally poor households are at **higher risk of violence** because they often face uncertain living conditions and have **less financial independence and bargaining power** within the household. In some countries traveling long distances to fetch water and food or to go to school or work puts women at risk of **sexual and physical violence**.

### Multidimensional Poverty Index Detailed Indicators

Dimensions of Poverty	Indicator	Deprived if living in the household where	Weight
Health	Nutrition	Any adult under 70 years of age or any child for whom there is nutritional information is undernourished.	1/6
	Child mortality	Any child under the age of 18 years has died in the family in the five-year period preceding the survey.	1/6
Education	Years of schooling	No household member aged 'school entrance age + six4 years or older has completed six years of schooling.	1/6
	School attendance	Any school-aged child is not attending school up to the age at which he/she would complete class eight.	1/6
Standard of living	Cooking Fuel	The household cooks with dung, wood, charcoal or coal.	1/18
	Sanitation	The household's sanitation facility is not improved(according to SDG guidelines) or it is improved but shared with other households.	1/18
	Drinking Water	The household does not have access to improved drinking water or improved drinking water is at least a 30-minute walk from home, round trip.	1/18
	Electricity	The household has no electricity.	1/18
	Housing	At least one of the three housing materials for roof, walls and floor are inadequate: the floor is of natural materials and/or the roof and/or walls are of natural or rudimentary materials	1/18
	Assets	The household does not own more than one of these assets: radio, television, telephone, computer, animal cart, bicycle, motorbike or refrigerator, and does not own a car or truck.	1/18

#### **WORLD ECONOMY:**

#### **Global Minimum Tax:**

### **Agreement on Global Minimum Tax**

- Organisation for Economic Co-operation and Development (OECD) finalised a landmark agreement to subject multinational enterprises (MNEs) to a **minimum 15% tax**, called Global Minimum Tax, from 2023. A total of 136 countries, including India, have agreed to join the historic agreement. This agreement has also been endorsed by the G-20 countries.

**Objectives** of Global Minimum Tax are

1. to ensure that multinational enterprises (MNEs) pay a fair share of tax in countries they operate, and
2. prevent competition among countries to reduces taxes which erodes the revenue base of the countries.

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## Two Pillars of Global Minimum Tax:

There are two pillars under the Global Minimum Tax devised by OECD.

### Pillar I:

- This covers digital MNEs such as Google, Amazon, Apple, Netflix, etc which make profits through advertisements in various countries and do not pay any tax in host countries as they do not have physical presence there. Under the agreement, MNEs with global sales of over? •20 billion and?profitability of over 10% will have to pay taxes in the countries they generate revenues even though they do not have any physical presence.
- Around \$125 billion of profits annually will be taxed in countries where these profits are generated. At present, companies like set up subsidiaries in tax havens (Example: Google set up subsidiary in Ireland), run their operations from there and file corporate tax returns there which collect very low taxes or do not collect any taxes.

### Pillar II:

- This covers companies which **reduce tax burden by setting up subsidiaries in tax havens and transferring trademarks and intellectual property rights to these subsidiaries**. Huge revenues from high tax countries are transferred to these subsidiaries set up in tax havens as royalties on trademarks and intellectual property rights.
- Now under the OECD agreement, companies with annual revenues over 750 million euros (\$864 million) will be liable to pay minimum tax of 15 %.
- If company earnings are not taxed (i.e. Zero Tax) or taxed at very low rates in any tax jurisdiction, its home country would impose a top-up tax and bring the rate to 15%.
- This measure is expected to generate US **\$150 billion in new revenue for governments annually**.
- Most of this amount would go to **rich countries** mainly **US** and **European countries** because many of the biggest multinationals are headquartered there.
- Due to this reason, some of the developing countries took part in the talks like Nigeria, Kenya, Pakistan and Sri Lanka did not sign the agreement.

### Background:

- Global Minimum Tax is a key initiative pushed by US President Joe Biden.
- Global corporate tax rates have been declining drastically (race to the bottom) as some countries have been reducing taxes drastically to attract investments.
- U.S. levied a corporate tax of 35 per cent till 2017. The then President Donald Trump through Tax Cuts and Jobs Act (TCJA), 2017, reduced it to 21 per cent to incentivise investments and create more jobs in the U.S. The new administration under President Joe Biden wants to increase the tax to 28 per cent to fund investments in infrastructure, clean energy, etc.
- While US wants to raise corporate tax domestically, it also wants to ensure that tax haven countries collect a minimum tax (called Global Minimum Tax) so that its Multinational Enterprises do not resort to setting up subsidiaries there to avoid relatively higher taxes in US. Hence, it has been actively been pursuing the issue with OECD, G-7 and G-20.

### Impact of Global Minimum Tax on India:

- Global Minimum Tax benefits India especially under **Pillar I** (Taxing of digital companies)
- Many digital companies like Google, Facebook, and Amazon do not pay any tax on advertising revenue stating that they **do not have any physical presence**. As a result, India has to

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suffer tax revenue losses on this advertising revenue. However, to plug this loophole, India introduced **Equalisation Levy** (commonly called digital tax) of 6 % in 2016 on advertising revenue from companies like Google, Amazon and Facebook.

- With the introduction of Global Minimum Tax, digital companies like Google, Facebook, and Amazon will have to pay taxes in locations where profits are generated even though they do not have physical presence.
- (Note: It may be noted here that Google, Facebook and Amazon have physical presence (offices) in India but these are software development offices and do not carry out digital marketing operations from here. These internet based companies bill their customers from off-shore units located in tax haven countries, for instance Google from Ireland).

### **Additional Information:**

#### **How do Multinational Companies Reduce Tax Payments?**

They exploit the difference in tax rates in various tax jurisdictions and device clever strategies to reduce tax payments by shifting profits from high tax jurisdictions to low tax jurisdictions.

Some of the strategies adopted by the Multinational companies are given below.

#### **1. Intellectual Property (IP) Restructuring:**

Multinational companies transfer their intellectual property rights from high tax jurisdiction to low tax jurisdiction.

Low tax jurisdiction will be the owner of intellectual property rights.

This mechanism is exploited by digital companies like Google as well as consumer goods companies.

Google has transferred its intellectual property rights to Ireland which taxes only 12.5 per cent corporate tax. The royalty earned through transfer of intellectual property rights is collected and retained in Ireland. As the tax rate is low in Ireland, it maximises the profits of the company.

This structure is also misused by companies in the consumer goods segment.

Some companies register their brands in low tax jurisdictions and pay a royalty to the low tax jurisdiction company for using the brand. Royalty is paid as a percentage of sales from the domestic company. This reduces the tax amount for the domestic company.

#### **2. Base Erosion:**

Base Erosion Base erosion refers to strategies that help an entity do business without having any business establishment in a country. As a result, they escape territorial jurisdiction of a country.

This erodes the tax base of the country.

This strategy is used by digital economy companies like Google.

All global income of Google which is earned through advertisements without physical presence in various countries is accounted and collected from Ireland which is a low tax jurisdiction.

#### **3. Thin Capitalisation:**

In this strategy, multinational companies concentrate capital in companies set up in low cost jurisdictions.

All the capital required for setting up and running companies in high tax jurisdiction is provided by the company set up in low cost jurisdiction. This company has to pay interest for the capital received from low tax jurisdiction. This decreases the taxable income of company in high tax jurisdiction. At the same time, the interest received faces no or nominal tax in low tax jurisdiction.

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### About OECD:

- **Organisation for Economic Cooperation and Development (OECD)** played a key role in drafting and finalising the Global Minimum Tax Agreement.
- It is an **international organisation** in which governments work together to seek solutions to common **economic, environmental and social problems**. It acts as a forum for developing global standards in these areas through consensus.
- It was set up in **1961** and **succeeded Organisation for European Economic Co-operation (OEEC)** which was formed in 1948 to administer American and Canadian aid under the **Marshall Plan** (named after the then US Secretary of State George Marshall) for the **reconstruction of Europe after World War II**.
- OECD headquarters are in Paris, France.

### Members of OECD:

- At present, there are 38 Member Countries: Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, South Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

### Key Partners

- The OECD works closely with some of the world's largest economies: **Brazil, China, India, Indonesia, and South Africa**, are OECD Partner countries and not members of OECD.
- Key Partners participate in policy discussions in OECD bodies, take part in regular OECD surveys and are included in statistical databases.

### Work of OECD:

- The OECD provides regular basic data on a wide range of areas like quarterly and annual national accounts, business statistics, consumer prices, productivity, trade statistics, etc.
- Twice a year, the OECD publishes its economic outlook, '**OECD Economic Outlook**' which analyses the economic prospects for the members and major non-member countries.
- It has Observer status in UN General Assembly and UN Social and Economic Council. It contributes to work of UN bodies on issues such as **sustainable development, environment, gender, statistics, and social affairs**.
- It also provides analysis and expertise to G-7 and G-20 on **global economic issues and inclusive growth**.

### Key Policy Contributions of OECD:

#### Some of the policies developed by OECD are

- OECD Anti-Bribery Convention,
- G20/OECD Principles of Corporate Governance,
- OECD Guidelines for Multinational Enterprises,
- Codes of Liberalisation,
- Convention on Mutual Administrative Assistance in Tax Matters and Automatic Exchange of Information in Tax Matters,
- Multilateral Convention to Prevent Base Erosion and Profit Shifting (BEPS),
- Recommendations on Polluter-Pays Principle,

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- Recommendations on Gender Equality,
  - Recommendation on Integrated Mental Health, Skills and Work Policy, and
  - Guidelines on Corporate Governance of State owned Enterprises (SOEs).

### ***Global Wealth:***

## **Global Wealth Has Grown, But at the Expense of Future Prosperity: World Bank**

- The World Bank released the report titled '**Changing Wealth of Nations**' in October 2021. It provides an updated database and analysis of the wealth of 146 countries between 1995 and 2018.

### **How is Wealth Measured?**

- By measuring the economic value of the following four components
1. **Natural Capital** which includes Renewable natural capital (such as forests, mangroves, fisheries, agricultural land, and protected areas) and Nonrenewable natural capital (minerals and fossil fuels),
  2. **Human capital** (skills and experience of the labour force),
  3. **Produced capital** (buildings and infrastructure, intangible wealth such as intellectual property),
  4. **Net foreign assets** (the sum of a country's external assets and liabilities).

### **Why Wealth should be Measured?**

- A nation's income (GDP) is generated by its wealth. Wealth accounts reflect the state of assets that produce GDP. Hence, wealth accounts are a necessary complement to gross domestic product (GDP).
- GDP indicates whether an economy is growing, but wealth indicates the prospects for long-term economic growth.
- Sustained economic growth over the long term requires building and managing this broad portfolio of assets of wealth (Natural Capital, Renewable capital, human capital and net foreign assets)

### **Limitations of GDP:**

- Although a macroeconomic indicator like GDP is an important indicator of economic activity, it is a flow measure that captures income or production over a period but does not reflect changes in the underlying asset base.
- Hence, used alone, GDP may provide **misleading signals** about the state of the economy, the efficiency of asset utilization, and the sustainability of development. **GDP does not reflect depreciation, depletion, and degradation of assets.**
- Hence, wealth measurement should be used alongside GDP to provide a means of monitoring the sustainability of economic development.

### **Key Findings of the Report:**

- Global wealth (produced capital, renewable and nonrenewable natural capital, human capital, and net foreign assets) grew **90 percent** from 1995 to 2018, reaching US\$1,152 trillion (from US \$ 603 billion)
- High income countries account for 61 per cent of global wealth.
- Middle-income countries are catching up to high-income countries and account for around 39 per cent of global wealth. Low income countries account for just 1 per cent of global health.

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- low-income countries' share of global wealth increased only from 0.5 to 0.6 percent.
  - **China's** performance was the most striking, as its share of global total wealth transformed from a modest 7 percent in 1995 to **21 percent** by 2018.

**Concerns:**

**1. GDP increasing at the expense of total wealth and future prosperity:**

In many countries, **GDP is increasing at the expense of total wealth and future prosperity.**

If not properly informed, citizens might mistakenly expect their improving prosperity to continue indefinitely. However, if rising GDP today comes at the expense of declining wealth per capita, then **prosperity will be unsustainable.** Economic growth **will erode its own base.**

In countries where today's GDP is achieved by consuming or degrading assets over time, for example by **overfishing or soil degradation**, total wealth is declining. This can happen even as GDP rises, but it undermines future prosperity.

**2. Declining Per capita wealth:**

While total wealth has increased, per capita wealth has not. More than a third of low-income countries saw falling wealth when measured in per capita terms as wealth creation failed to keep pace with population. **Declining wealth per capita breaks a core principle of sustainability:** future generations should be left no worse off than current generations.

**3. Global wealth inequality:**

Global wealth inequality is also increasing. Low-income countries are falling further behind in terms of their share of global wealth.

Low-income countries saw per capita wealth growth by less than the global average, at 22 percent compared with 44 percent. This means that low-income countries are falling further behind the rest of the world, creating a significant divergence in global wealth per person.

**Economic development cannot be socially sustainable if it is not inclusive.** Inclusiveness across countries requires the poorest countries to catch up with the per capita wealth of the rest of the world.

**RC REDDY IAS STUDY CIRCLE**

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# NATIONAL POLITY

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## **Fundamental Rights:**

### **Supreme Court Constitutes Committee to Examine Pegasus Allegations**

- In October 2021, the Supreme Court constituted an independent expert technical committee overseen by a former Supreme Court judge, Justice R.V. Raveendran, to examine allegations that the government used an Israeli company spyware called Pegasus to spy on its own journalists, lawyers, human right activists and politicians.

### **Background:**

- In July 2021, an international consortium of 17 media organisations in a collaborative investigative project exposed the alleged unauthorised surveillance of citizens in the guise of national security and public safety by Governments around the world through the use of sophisticated spyware called Pegasus which is developed by Israel Cyber intelligence company NSO Group.
- It released a **list containing thousands of phone numbers across 50 countries targeted by** Pegasus spyware. Over 300 verified Indian mobile phone numbers were on a **list of potential targets for surveillance**. Among those in the list of potential targets for surveillance in India include Journalists, Human Rights Activists, Social Activists, Politicians, Academics, Lawyers, etc.
- After this revelation, many petitions were filed in the Supreme Court, including petitions by the Editors Guild, N Ram of 'The Hindu', seeking independent probe by sitting or former Judge of Supreme Court into the allegations of surveillance.

### **What is the Crux of the Issue?**

- Central and State Governments can undertake surveillance in case of 'public emergency' and in the 'interest of public safety'
  - Indian Telegraph Act, 1885 provides for interception of calls and messages and Information Technology (IT) Act, 2000 for interception of data (e-mails, WhatsApp messages, etc.)
  - Under both laws, only the government is permitted to conduct surveillance, and not private actors.
  - However, currently, surveillance is entirely the **prerogative of the executive**. Union Home Secretary or State Secretaries in charge of the Home Departments can issue orders for surveillance.
  - There **is no mechanism to check the misuse of surveillance technology** by Executive (Government agencies).
  - Hence, Government can use the surveillance technology for purposes other than 'public emergency' and in the 'interest of public safety'. When surveillance is used for purposes other than above stated objectives, it leads to following consequences.
1. **Violation of Right to Privacy** which has been recognised as a fundamental right (under Article 21: Right to life and Personal Liberty) by the Supreme Court in 2017 (Justice K. S. Puttaswamy (Retd.) vs. Union of India and Others).

The Judgement also ruled that an invasion of life or personal liberty must meet the threefold requirement of

**Legality:** state action must be **sanctioned by law**

**Need:** a legitimate aim for action; and

**Proportionality:** Action must be **proportionate to the need for such interference**.

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## 2. Threat to Freedom of Thought and Expression:

Intrusive surveillance of Journalists, Human Rights Activists, Social Activists, Politicians, Academics, Lawyers, etc. seriously compromises the effective exercise of freedom of thought and expression which are fundamental rights.

Such surveillance can be used to suppress dissent by targeting independent institutions like Press and also opposition parties. Pegasus was used on journalists from across the country who have been critical of the Government.

## 3. Chilling effect on individuals:

Intrusive surveillance of citizens will also have a chilling effect on freedom of expression. Chilling effect means where individuals or groups refrain from engaging in free expression of their views due to fear of repercussion by Government.

## 4. Illegal Surveillance:

There is **also no legal sanction** for use of deeply intrusive spyware like Pegasus in India.

Both Telegraph Act of 1885 and Information Technology Act, 2000 provide for interception of communication and messages over phones and computing devices. But the spyware like Pegasus turns computing devices into surveillance devices which is not permitted under both the above laws.

### Why Did the Supreme Court Set up Committee to Investigate Surveillance?

- In its response for calls demanding independent investigation, the Government did **not confirm or denied whether** it had **purchased** or **deployed** Pegasus spyware citing national security implications.
- It stated that if details are revealed, **those intercepted may take preemptive or corrective measures.**
- The Supreme Court did not agree with the stand of the Government stating that national security cannot be a blanket cover for refusing the investigation when there is alleged violation of fundamental rights of citizens.
- It stated that in a democratic country governed by the rule of law, **indiscriminate spying on individuals cannot be allowed** except with sufficient statutory safeguards, by following the procedure established by law under the Constitution.

### Suggestions to Check Misuse of Surveillance by Government:

#### 1. Legal Framework:

There is need for a legal framework for agencies involved in surveillance in the country which should clearly define their functions.

#### 2. Parliamentary Oversight:

These agencies must be brought under Parliamentary oversight and scrutiny to ensure that surveillance is carried for only national security purpose.

A standing committee of Parliament on Intelligence should be created in this regard. There should be an independent office which should record all surveillance orders including justification for surveillance orders and reviews of their outcomes and report to the Standing Committee.

### **Furlough Not Prisoner's Right: Supreme Court**

- In October 2021, the Supreme Court ruled that Prisoners who have served a certain time under imprisonment could be given furlough but they cannot claim it as a matter of right.
- The Supreme Court set aside a Gujarat High Court order which granted furlough to rape convict Narayan Sai, son of self-styled Godman Asaram Bapu.

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**Details:**

- 'Prisons' is a **State subject** under the State List of the Seventh Schedule of the Constitution.
- The management and administration of prisons fall exclusively in the domain of state governments and are governed by the Prisons Act, 1894, and the Prison Manuals of the respective state governments.
- As per the Prisons Act, states can make rules regarding the release of prisoners on furlough, parole and remission, as part of the correctional process in jail reforms. However, the Centre too can formulate non-binding guidelines.
- Thus "Furlough" and "parole" are two distinct terms now being used in the Jail Manuals or laws relating to **temporary release of prisoners**.

**Furlough:**

- Furlough means brief release of prisoners from the prison. It is conditional and is given in case of long-term imprisonment. Furlough is given to prisoners after serving a stipulated term in prison.
- For instance, a prisoner sentenced to life imprisonment may be released on furlough every year for two weeks after he completes seven years actual imprisonment.
- Furlough is granted to break the monotony of imprisonment and to enable the convict to maintain continuity with family life and integration with society.
- However, Furlough cannot be claimed as a right. It is not granted to prisoners whose conduct is, in the opinion of Superintendent of the Prison, not satisfactory enough.

**Parole:**

- Parole is granted for the prisoner to meet a specific exigency like death of a family member. Thus it is a situational relief.

***Tribunals:*****National Green Tribunal Has Suo Motu Powers: Supreme Court**

- In October 2021, the Supreme Court ruled that the National Green Tribunal (NGT) has suo motu power in discharge of its functions under the National Green Tribunal (NGT) Act though the power is not explicitly provided under the Act.

**Background:**

- In 2018, the National Green Tribunal (NGT) took suo motu (on its own) cognisance of flouting of solid waste management rules, 2016 by Brihanmumbai Municipal Corporation (BMC) based on the online news portal, Quint, and imposed a fine of Rs. 5 crore.
- An investigating team set up by NGT found that dumping of solid waste without proper treatment at the Deonar (Mumbai suburb) damages environment and a threat to public health.
- Brihanmumbai Municipal Corporation (BMC) challenged the NGT fine on the grounds that NGT does not have suo motu powers under the statute (National Green Tribunal Act, 2010).
- The Supreme Court then imposed a temporary stay on the fine and gave the present judgment on whether the NGT has suo motu powers under the National Green Tribunal Act, 2010.

**Arguments of Petitioners:****1. No Statutory Provision:**

National Green Tribunal is a statutory body and its powers and functions are defined in the statute. The statute does not confer suo motu (initiating action on its own) on NGT and its role is only adjudicatory i.e. decide disputes between two contesting parties.

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## 2. Powers Not Similar to Supreme Court and High Courts:

Since it is a statutory body, it can also not exercise suo motu powers like Supreme Court (under Article 32 of the Constitution) and High Courts (under Article 226). Article 32 and 226 provide for suo motu cognisance (judicial review) of Government decisions to safeguard fundamental rights of citizens.

### Judgement of the Supreme Court:

#### 1. Environmental Jurisprudence Transferred Courts to National Green Tribunal:

Though the NGT Act does not provide for suo motu powers, it is necessary to consider the rationale and larger objective behind the creation of National Green Tribunal (NGT). It was created as a specialised body to deal with the multitude of issues relating to the environment dealt with by the High Courts (under Article 226) and Supreme Court (under Article 32 of the Constitution). Since the issues being dealt by High Courts and Supreme Court have been transferred to the NGT, it can exercise suo motu powers with regard to environmental issues.

#### 2. Right to Healthy Environment a Fundamental Right:

Right to Healthy Environment has also been recognised as a Fundamental Right by the Supreme Court. It was recognised as part of Right to life under Article 21 in 1991.

#### 3. Principles of Environmental Justice and Equity:

The poor are disproportionately affected by environmental problems like water pollution, air pollution. They may not be in position to understand the environmental problems in their surroundings. Even if they understand, they may be financially handicapped to approach Tribunal for redressal. Environmental Justice and Equity are the crux behind the formation of National Green Tribunal and suo motu powers ensure implementation of the same.

## **SOCIAL SECTOR:**

### ***Health Infrastructure:***

#### **Ayushman Bharat Health Infrastructure Mission Launched**

- Learning from the shortcomings in the public healthcare delivery system witnessed during the two waves of COVID-19 outbreaks, the Union Government launched **PM Ayushman Bharat Health Infrastructure Mission** with an outlay of **Rs. 64,180** crores in October 2021.
- The mission's objective is to **fill the critical gaps in the public health infrastructure in the country** in terms of **disease surveillance capabilities, diagnostic infrastructure (laboratories) and Intensive care units.**

The following are the major initiatives under the mission.

#### **1. Critical care facilities:**

Exclusive critical care blocks will be set up in all districts hospitals with a population of more than 5 lakhs. 37,000 beds with Intensive care units (ICUs), ventilators and oxygen support will be set up in these hospitals. This will make these districts units self-sufficient in comprehensive treatment for all diseased including infectious diseases like COVID.

Exclusive critical care blocks will cover 600 districts out 730 districts. Remaining districts will have referral facilities

#### **2. IT Enabled Disease Surveillance System:**

An IT enabled Integrated Health Information Platform (IHIP) will be set up by integrating national, regional, state, district and block level laboratories for detection, prevention and containment of disease outbreaks.

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### 3. Public Health Units at Points of Entry:

Public health units will be set up at 50 international entry points into the country ring fence our borders against the import of new infectious diseases and pathogens.

### 4. Free Diagnostic Facilities:

Over 4000 public laboratories will be set up at district and block levels (It will cover all the 730 districts in the country and 3500 identified blocks). More than 100 types of tests will be done free of cost in these labs which will save money for people.

### 5. New Institutes:

The following new institutes will be set up under the mission.

- a) 4 new National Institutes of Virology. (At present there is only one institute at Pune)
- b) 15 Biosafety Level-3 labs (safety standards are prescribed for labs while handling infectious virus. Level 3 labs are required for handling highly infectious virus).
- c) 5 new Regional National Centres for Disease Control.

At present there is only one institute at all India level namely National Centre for Disease Control (NCDC) at New Delhi. It carries out research on epidemiology and control of communicable diseases).

- d) National Institute for One Health. It will carry out research on zoonotic diseases (diseases which jump to humans from animals).
- e) The WHO's Regional Research Platform for South Asia

### 6. Container Hospitals:

Two container-based hospitals with comprehensive medical facilities (Each unit will have 100 ICU Bed capacity) will be kept ready at all times. These units can be swiftly mobilized by rail or air to respond to any calamity or disaster in the country.

### 7. Health and Wellness Centres:

Financial support for establishing 17,788 Rural Health and Wellness Centres in 10 High Focus States and 11,024 urban Health and Wellness Centres will be provided.

Health and Wellness Centres deliver Comprehensive Primary Health Care (CPHC) covering both maternal and child health services and non-communicable diseases, including free essential drugs and diagnostic services.

### ***Immunisation:***

#### **Pneumococcal Conjugate Vaccine Launched under Universal Immunization Programme**

- In October 2021, the Union Government launched nationwide expansion of Pneumococcal Conjugate Vaccine (PCV) under the Universal Immunisation Programme (UIP). At present, the PCV vaccine is being given to children in only few states i.e. Bihar, Himachal Pradesh, Madhya Pradesh, Uttar Pradesh (19 districts) and Rajasthan (18 districts).

#### **Details:**

- Pneumococcal disease includes a wide range of diseases caused by different types of pneumococcus bacteria (*Streptococcus pneumoniae*). There are over 90 different types of these bacteria, and vaccines have been produced to protect against the types that cause the most disease.
- The common pneumococcal diseases are

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1. **Pneumonia** (lung infection which causes inflammation and accumulation of fluids in the lungs),
  2. **meningitis** (inflammation outer covering the brain and spinal cord),
  3. **bacteraemia/ sepsis** (blood infection),
  4. **sinusitis** (swelling of the tissues lining the sinuses i.e. air-filled spaces located behind the forehead, nasal bones, cheeks, and eyes),
  5. **bronchitis** (inflammation of the lining of bronchial tubes), and
  6. **middle ear infection** (Otitis Media).

#### **Disease Burden:**

- **Pneumococcal disease** particularly affects **very young babies (below 2 years), elderly people and those with weakened immune systems.**
- **Pneumonia** (lung infection) and **meningitis**(inflammation outer covering the brain and spinal cord) cause maximum mortality.
- **Pneumonia** can be caused by a **number of different bacteria, viruses and fungi.** However, it is estimated that at least two thirds of all cases of bacterial pneumonia are caused by *Streptococcus pneumoniae* bacteria.
- Around 15% of children with pneumococcal **meningitis** die, and 25% will have severe, lasting effects, including loss of hearing, loss of sight, learning and language disabilities, or seizures.

#### **Pneumococcal Conjugate Vaccines (PCV):**

- Pneumonia is a leading cause of death among children under-5 years old, globally and in India. **Pneumonia caused by pneumococcus** is responsible for maximum deaths in children due to Pneumonia.
- Hence, the World Health Organisation (WHO) recommended inclusion of Pneumococcal Conjugate Vaccines (PCV) in childhood immunisation programme worldwide.
- Vaccines have been produced to protect targeting various variants of bacteria that cause the most diseases.
- Two vaccines widely used worldwide to protect against pneumococcal disease for children are 'Prener 13' vaccine by Pfizer and 'Synflorix' by GSK.
- However, these vaccines are expensive. While the Pfizer vaccine 'Prener 13' is sold at Rs 3,801 per dose, GSK vaccine Synflorix is sold at Rs 2,195 per dose.
- Each child needs 3 doses: first dose at 1.5 months, second dose at 3.5 months and booster dose at 9 months.
- Hence, in India, Serum Institute of India (SII) developed pneumococcal conjugate vaccine called 'Pneumosil' at affordable price. It is sold at Rs. 220 for Government immunization programme and Rs. 730 for private market.
- Pneumosil provides protection against 10 variants of pneumococcus bacteria (pneumonia, meningitis, ear, and blood infections etc).

#### **Pneumococcal Vaccines:**

Pneumococcal Vaccines are two types.

1. Pneumococcal polysaccharide vaccine (PPSV23), and
  2. Pneumococcal Conjugate Vaccines (PCV)
- Pneumococcal polysaccharide vaccine (PPSV23) is used for vaccinating adults while Pneumococcal Conjugate Vaccine (PCV) is recommended for children.

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- Pneumococcal vaccines are derived from sugars (polysaccharides) from the capsule of the bacterium *Streptococcus pneumoniae*. Polysaccharide vaccines are effective in adults but are not that effective in infants in building immunogenicity (provoking immune response). Hence Conjugate Vaccines have been developed to enhance immunogenicity.
  - In Pneumococcal Conjugate Vaccines (PCV), each polysaccharide is conjugated (combined) to a carrier protein. The carrier protein is selected to improve the immune response in vaccinated children. Hence, PCV10 (targeting 10 types of pneumococcus bacteria) and PCV13 (targeting 13 types of pneumococcus bacteria) have been developed for children.

***Additional Information:***

**Universal Immunization Programme in India:**

- Immunization means developing immunity (ability to resist infection by harmful microorganisms like virus and bacteria) to diseases through vaccination. Vaccines generate antibodies for the targeted diseases and reduce severe disease and mortality.
- Infants and children are vulnerable to diseases caused by various types of bacteria and virus such as Diphtheria (bacterial infection that affects nose and throat), Pertussis (respiratory tract infection), Tetanus (bacterial disease affecting nervous system leading to stiffness of jaws, abdominal muscles), Polio (a life threatening disease which infects spinal cord leading to paralysis), Measles (a viral respiratory infection infections of the lungs and brain (encephalitis), Meningitis, Pneumonia, etc. which contributes to their mortality. But these deaths can be prevented through vaccines.
- Immunization is the **most cost effective public health intervention** for reducing infant mortality rate (IMR) and Under 5 Mortality Rate. Infants and children develop immunity to diseases through vaccines.
- Increasing child survival through reduction of **infant mortality rate** (number of deaths per 1,000 live births of children under one year of age) and **Under 5 Mortality Rate** is a major priority for Governments.
- Hence, India runs one of the world's largest immunization programmes.
- **Universal immunization programme** was launched in 1985 to protect children from vaccine preventable diseases and deaths.
- Under UIP, immunization is being provided **free of cost against 12 vaccine preventable diseases:**
  - Nationally against 10 diseases - Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Rotavirus diarrhea, Hepatitis B and Meningitis & Pneumonia caused by Haemophilus Influenzae type B
  - Sub-nationally against 2 diseases - Pneumococcal Pneumonia and Japanese Encephalitis.
- Now Pneumococcal Conjugate vaccine has been expanded nationally and only JE vaccine is provided in endemic districts.
- **Impact of Immunization Programme:**
  - The immunization programme has been contributing significantly in bringing down IMR and under 5 Mortality Rate.
  - Infant Mortality Rate (IMR) has reduced from 50/1000 live births in 2009 to **32/1000 live births in 2018**.
  - Similarly the under 5 mortality rate has reduced from 45 in 2014 to 34.3 in 2019.

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## **SOCIAL ISSUES:**

### ***Sanitation:***

#### **Swachh Bharat (Urban) Mission 2.0**

- In October 2021, the Union Government approved the continuation of Swachh Bharat Mission (Urban) till 2025-26 with an outlay of Rs. 1,41,600 crore.

#### **Background:**

- Swachh Bharat Mission (Urban and Rural) was launched by the Union Government in 2014 to address sanitation related issues in India. Sanitation coverage in India was low with just 39 coverage till 2014.
- Due to low sanitation facilities, open defecation (practice of defecating in the open like such as in fields, bushes, or by bodies of water) was widely prevalent.
- But open defecation has negative **public health consequences**. Exposed faecal matter contaminates water and the environment and contributes to vector-borne diseases like cholera. Flies and insects
- Open defecation also undermines **human dignity** Women and Girls move out their homes for defecation mostly during night which is also risk to their safety.
- Hence, the Swachh Bharat Mission was launched in 2014 to increase sanitation coverage and address other sanitation related issues. The mission was launched on October 2nd (of 2014) which is the birth anniversary of Father of the Nation Mahatma Gandhi who was also strong advocate of sanitation and held the view that 'Sanitation is more important than independence'
- Swachh Bharat Mission (Urban) launched in 2014 had the following components:
  1. Household toilets,
  2. Community toilets,
  3. Public toilets and urinals, and
  4. Solid waste management

#### **Details:**

##### **1. Household Toilets:**

Poverty is the cause of open defecation. Due to poverty, poor people do not construct household toilets and instead opt for open defecation. Hence, financial assistance is provided for construction of household toilets (Centre extended assistance of Rs. 4000 for household toilet in general category states and Rs.10, 800 in case Northeastern and hilly states). States should also contribute an amount of Rs. 2,667 per household toilet.

##### **2. Community Toilets:**

About 20% of the urban households in cities are currently practicing open defecation due to land and space constraints in constructing individual household latrine. Community toilets are being constructed as a solution to this problem.

For this component, beneficiaries shall be groups of households. Central government provides 40 % grant for the construction of community toilets.

##### **3. Public Toilets and Urinals:**

Under this component, all prominent places within the city attracting floating population shall be covered with sufficient number of public toilets and Urinals for which central government provides 40 % grant.

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#### 4. Solid waste management:

Municipal Solid Waste Management (MSWM) involves waste segregation and storage at source, primary collection, secondary storage, transportation, secondary segregation, resource recovery, processing, treatment, and final disposal of solid waste. The Central Government provides 35 % grant for the procurement of dustbins, tippers, solid waste collection and transportation equipment, setting up waste processing plants etc.

##### Progress under the Mission:

- Urban India was declared **open defecation free (ODF)** in 2019.
- A city / ward is notified/declared as ODF city/ ODF ward when following conditions are met.
- All households that have space to construct toilet, have constructed one.
- All occupants of those households that do not have space to construct toilet have access to a functional community toilet within a distance of 500 meters.
- All commercial areas have functional public toilets within a distance of 1 kilometer

##### Additional Protocols:

- The Union Government launched the **ODF+ and ODF++ protocols**, with a focus on sustaining ODF outcomes and achieving holistic sanitation.

##### ODF+:

- ODF+ protocol focuses on O&M of community/public toilets by ensuring functionality and proper maintenance of CT/PTs for their continued usage.

##### ODF++:

- ODF++ focuses on **safe management of faecal sludge** from toilets. No untreated sludge should be discharged into open drains, water bodies or in the open.

##### Water + protocol:

- Recently, the Government introduced the Water + protocol. It is aimed at ensuring that no untreated waste water is discharged into the open environment or water bodies.

##### Waste Management:

- **There is 100% door-to-door waste collection in 97% wards in urban India**

Focus of Swachh Bharat 2.0:

Swachh Bharat 2.0 will focus on

1. Sustainable Sanitation, and
2. Sustainable Solid Waste Management.

##### Sustainable Sanitation:

###### 1. Construction of additional sanitation facilities:

The Mission will focus on ensuring complete access to sanitation facilities to serve additional population migrating from rural to urban areas in search of employment and better opportunities. Over 3.5 lakhs individual, community and public toilets will be constructed in the urban areas over the next 5 years.

###### 2. Complete liquid waste management in cities in less than 1 lakh population:

This is a new component introduced under SBM-Urban 2.0. It will ensure that all wastewater is safely contained, collected, transported and treated and no wastewater pollutes our water bodies.

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### **Sustainable Solid Waste Management:**

1. Focus would be on **100 percent source segregation of waste** along with functional Material Recovery Facilities (MRFs) in cities. Single use plastic would be phasing out.
2. **Construction & Demolition (C&D)** waste processing facilities will be set up in cities.
3. **Bio-remediation** or **capping** of all legacy dumpsites (aged dumping sites) will be undertaken.

**Bio-remediation** (also called biomining) is an environment-friendly technique to separate soil and recyclables from legacy waste

More than 10,000 hectares of urban land is locked in these dumpsites in India. In the absence of exposure to air (oxygen), these dumpsites generate methane (a greenhouse gas), which contribute to global warming. They also produce leachate (liquid generated by dumped) waste) which pollutes groundwater. Methane often auto-ignites, causing fires in the dumpsites and thereby severe air pollution.

### **Urbanisation:**

#### **Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0** **Approved**

- In October 2021, the Union Government approved the continuation of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) till 2025-26 with an outlay of Rs.

### **Background:**

- Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was launched in 2015 in 500 cities across India (covering 60 % of urban population) with an outlay of Rs. 1,00,000 crores to ensure every household access to a tap with assured supply of water and a sewerage connection.
- The major components of the mission are
- Water Supply (augmentation of existing water supply, water treatment plants, rehabilitation of old water supply systems, rejuvenation of water bodies specifically for drinking water supply and recharging of ground water.)
- Sewerage and septage management (laying underground sewerage systems, including augmentation of existing sewerage systems and sewage treatment plants)
- Storm Water Drainage constructions to reduce flooding
- Public Urban Transport to reduce pollution
- Green space/parks.

### **Funding Assistance:**

- The Central Government provides one-third of the project cost as grant in cities with a population of above 10 lakh and one-half of the project cost as grant for cities/towns with population up to 10 lakh. Balance funding has to be borne by State Governments / Urban Local Bodies (ULBs) or through private investment.

### **Progress under the Mission:**

- 1.14 crore water tap connections have been provided taking total connections in AMRUT cities.
- 85 lakh sewer connections including households covered under septage facilities have been provided.
- 6,000 MLD (Million Litres for Day) of Sewage Treatment capacity is to be developed of which 1,800 MLD of treatment capacity has been developed.

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- Through green spaces projects, 3,850 acre of green spaces have been added.
  - Rejuvenation of 106 water bodies has been taken up.

**AMRUT 2.0:**

- AMRUT 2.0 has been approved with an outlay of **Rs 2,97,000 crores** (Central Government share is Rs. 76,760 crores)
- While AMRUT 1.0 covered only 500 cities, AMRUT 2.0 has been **expanded to cover 4,700 towns / cities covering 100 per cent of urban India.**

**Objective of AMRUT 2.0:**

- 100% coverage of water supply to all households in 4,700 town and cities (2.68 crore urban household tap connections would be provided benefitting around 10.7 crores people.)
- 100% coverage of sewerage and septage in 500 AMRUT cities (2.64 crore sewer connections/ septage connections would be provided benefitting around 10.6 crores people.)
- Rejuvenation of water bodies and urban aquifer management to augment sustainable fresh water supply.
- **20% of total water needs of the cities and 40% of industrial demand to be met through recycling and reuse of wastewater after treatment.**
- Protection of fresh water bodies from getting polluted to make natural resources sustainable.

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# **FOREIGN RELATIONS**

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## ***India-ASEAN:***

### **18th India-ASEAN Summit**

- 18th ASEAN-India Summit was held in October 2021.

#### **Details:**

#### **What is ASEAN?**

- ASEAN (Association of South East Asian Countries) is an inter-governmental organisation of 10 countries.
- It was founded in 1967 by 5 countries: **Indonesia, Malaysia, the Philippines, Singapore and Thailand**. Later 5 more countries joined: **Brunei (1984), Vietnam (1995), Laos and Myanmar (1997) Cambodia (1999)**.

#### **Why was ASEAN formed?**

- There were disputes between ASEAN countries in the 1960's. So initially the Leaders of five countries met in 1967 and decided to resolve disputes peacefully without the involvement of advanced countries. Moving a step ahead they also decided to forge regional cooperation for mutual benefit.
- Thus the **ASEAN was formed with the aims of**
  1. promoting regional peace and stability in the region (through settlement of differences or disputes by peaceful manner, non-interference in the internal affairs of one another country), and
  2. accelerating economic growth, and social progress in the region through joint endeavours.

#### **Achievements of ASEAN:**

##### **1. Peace and Stability:**

ASEAN has **successfully maintained peace, stability and security** in the region through the various frameworks and mechanisms

The notable among them are **Treaty of Amity and Cooperation in Southeast Asia (TAC)** (1976), and **Southeast Asian Nuclear-Weapon-Free Zone Treaty (SEANWFZ)** (1995).

To further enhance regional cooperation in political and security issues, the **ASEAN Regional Forum (ARF)** was established in 1994, which now comprises 27 participating countries including all major regional players and serves as a forum for constructive dialogue and consultation to promote confidence building and preventive diplomacy in the region.

In 2007, member countries adopted **ASEAN Charter** which provided the grouping legal status and institutional framework.

In addition to peace and stability and economic integration, other objectives were incorporated into ASEAN charter namely alleviating poverty and narrowing development gap within ASEAN through mutual assistance and cooperation, strengthening democracy, good governance, rule of law, human rights, and fundamental freedoms of people

##### **2. Economic Integration:**

On the economic front, ASEAN has made an important milestone in regional economic integration with the conclusion of **ASEAN Free Trade Area (AFTA) Agreement in 1992**. Since then, ASEAN has continuously pursued **closer economic cooperation in trade, services and investment**.

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The Free Trade Agreement led to creation of a **single market, increased intra-ASEAN trade and investments, and attracted foreign investment into the region.**

### 3. Cooperation in Other Areas:

As part of ASEAN Charter, there is also functional cooperation in many areas among ASEAN countries, such as **education, disaster management, health, environment, rural development, and science and technology (S&T)** among the ASEAN countries. Such cooperation has helped increase regional resilience and enabled them to respond effectively to challenges such as pandemics (SARS), natural disasters (2004 tsunami and 2008 Cyclone Nargis), and other transboundary challenges such as haze and drugs.

### 4. External Relations:

With regard to external relations, ASEAN has cultivated close cooperation in numerous fields in the frameworks of ASEAN+1 (with its 10 dialogue partners, i.e. Australia, Canada, China, India, Japan, Republic of Korea, New Zealand, Russia, United States, and European Union), and the East Asia Summit (EAS).

#### India-ASEAN Relations:

- India began formal engagement with ASEAN in 1992 as a "Sectoral Dialogue Partner" (Secretary level interaction) and subsequently as a "Dialogue Partner" (1995). This was further upgraded to the **Summit level in 2002**, when the first such Summit level meeting was held.

#### Economic Engagement:

##### Trade in Goods:

- India signed Trade Agreement in Goods with ASEAN in 2009 which came into force in 2010. The agreement substantially reduced tariffs on most of the goods traded between India and ASEAN countries.
- **Bilateral Trade increased** from around US \$ 5 billion on 1996-97 to around US \$ 86 billion in 2019-20. But there is significant trade deficit of around US \$ 24 billion.
- **ASEAN countries benefitted** from the Trade Agreement in Goods. Hence, India is seeking a review of the trade agreement to make it **more balanced and mutually beneficial.**

##### Trade in Services:

- India ASEAN Free Trade Agreement in Services and Investments was signed in 2014 and came into force in 2015. The agreement opened up ASEAN market for movement of Indian professionals (software engineers, doctors, and healthcare workers like nurses) on their own or as an employee of service supplier (Eg: consultancy firm, construction company, hospitals, etc.)

#### Outcome of 18th ASEAN-India Summit:

- India and ASEAN agreed to strengthen cooperation in the following areas
- People-to-people connectivity (by supporting cooperation in areas such as education, women empowerment, youth, tourism, media, and engaging think-tanks and local governments / authorities)
- Energy security,
- Environment protection,
- Sustainable development of marine resources,
- Maritime security

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- Climate change adaptation and mitigation
  - Disaster risk reduction and management

**UNHRC:**

**India Re-elected to UN Human Rights Council (UNHRC)**

- India got re-elected to **UN Human Rights Council (UNHRC)** in October 2021 for a new three year term 2022-24.
- Member countries of UNHRC are elected by the United Nations General Assembly directly through secret ballot (voting) for a three year term. **India got 184 votes in the 193-member assembly.**

**Background:**

UNHRC was set up in 2006 replacing the UN Commission on Human Rights.

1. It is the **principle intergovernmental body** of the United Nations (UN) **responsible for strengthening the promotion and protection of human rights around the globe.**
2. The Council holds meetings throughout the year providing a multilateral forum to address human rights violations wherever and whenever they occur. It responds to human rights emergencies and makes recommendations on how to better implement human rights on the ground.
3. The Council can also **establish international commissions of inquiry and fact-finding missions** investigating and responding to human rights violations, to help expose violators and bring them to justice.
4. As part of Universal Periodic Review Mechanism, it assesses the human rights situations in all United Nations Member States.
5. **Universal Declaration of Human Rights (UDHR)** which was unanimously approved by the United Nations General Assembly in 1948 was drafted by UN Commission of Human Rights, the predecessor of UN Human Rights Council. **UDHR is not legally binding on countries but it articulates certain universal rights (civil rights and political rights) which should be enjoyed by all people irrespective** of where they are or where they live. Such Rights include equality before the law; protection against arbitrary arrest; the right to a fair trial; the right to own property; freedom of thought, conscience, and religion; freedom of opinion and expression; and freedom of peaceful assembly and association, etc. These rights are part of Constitutions of many countries.

**Membership UN Human Rights Council (UNHRC):**

- The Council is made of **47 Member States**, which are elected by the majority of members of the General Assembly of the United Nations through direct and secret ballot. The General Assembly takes into account the candidate States' contribution to the promotion and protection of human rights, as well as their voluntary pledges and commitments in this regard.
- The Council's Membership is based on equitable geographical distribution. Seats are distributed as follows:
  - African States: 13 seats
  - Asia-Pacific States: 13 seats
  - Latin American and Caribbean States: 8 seats
  - Western European and other States: 7 seats
  - Eastern European States: 6 seats
- Members of the Council serve for a period of three years and are **not eligible for immediate re-election after serving two consecutive terms.**

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## INTERNATIONAL POLITY

### *China:*

#### China Tests Nuclear Capable Hypersonic Missile

- China's military has carried out its first-ever test of a nuclear capable hypersonic missile (travels at speeds greater than 5 times the speed of the sound) recently.
- The missile circled the globe before speeding towards its target, demonstrating an advanced space capability.

#### **Significance:**

- Hypersonic missiles are a significant improvement over ballistic missiles which are presently used for long range targets (more than 5000 kms).
1. They **travel at greater speeds** when compared with ballistic missiles (greater than 6000 km per hour compared to 5000 km per hour of ballistic missiles).
  2. They are also **manoeuvrable** i.e. change the direction mid way unlike ballistic missiles which follow fixed trajectory.
  3. Because of speed and manoeuvrability makes **detection and interception of hypersonic missiles extremely difficult**. Radars and air defences cannot detect them till they are very close and as result they have very little time to react.

#### **Types of Hypersonic Missiles:**

There are two classes of hypersonic weapons:

- Hypersonic glide vehicles (HGV), and
- Hypersonic cruise missiles (HCM).

HGVs are launched from a rocket before gliding to a target while HCMs are powered by high-speed, air-breathing engines, or scramjets.

#### **Which countries are developing hypersonic missiles?**

- At present, **China and Russia** have gained edge in developing hypersonic missiles.
- While the U.S. has active hypersonic development programmes, it is lagging behind China and Russia because most U.S. hypersonic weapons, in contrast to those in Russia and China, are not being designed for use with a nuclear warhead.
- Apart from US, China, Russia, a number of other countries - including Australia, India, France, Germany, and Japan - are developing hypersonic weapons technology.
- India is developing an indigenous, dual-capable hypersonic cruise missile as part of its Hypersonic Technology Demonstrator Vehicle (HSTDV) program and successfully tested a Mach 6 scramjet engine.

#### **Additional Information:**

##### **Mach Numbers:**

- Speed of the sound is 330 metres per second or 760 miles per hour.
- The speed of an aircraft or a missile is measured in Mach numbers (in honour of 19th century physicist Ernst Mach). Mach 1 equals the speed of sound in air i.e. 330 metres per second or 760 miles per hour.
- **Subsonic vehicles:** travel at speeds **less than** Mach 1
- **Transonic vehicles:** travel at speeds **equal** to Mach 1

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- **Supersonic vehicles:** travel at speeds **greater than Mach 1** (between Mach 1 and Mach 3)
  - **High supersonic vehicles:** travel at speeds **between Mach 3 and Mach 5.**
  - **Hypersonic vehicles:** travel at speeds **greater than five times the speed of sound** (between Mach 5 and Mach 10)
  - **High hypersonic vehicles:** travel at speeds greater than Mach 10 (between Mach 10 to Mach 25). A Space Shuttle re-enters the atmosphere at high hypersonic speeds of around Mach 25.

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# **SCIENCE & TECHNOLOGY**

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## **ENVIRONMENT:**

### ***Forest Conservation:***

#### **Proposed Changes to Forest Conservation Act, 1980**

- In October 2021, the Union Ministry of Environment, Forest and Climate Change proposed amendments to Forest Conservation Act, 1980.

#### **Background:**

#### **Forest Conservation Act, 1980: Why was the act enacted?**

- Forests was a subject under the State List after independence.
- As a result State Governments got powers to notify forests and also allow diversion of forests for various purposes like agriculture, infrastructure projects, mining, etc. But, conferring powers on State Governments over forests also led to indiscriminate diversion of forest lands for non-forest purposes.
- Hence, in 1977, the subject 'Forests' was shifted from State list to Concurrent List and the Union Government enacted Forest Conservation Act, 1980.
- According to the Forest Conservation Act, 1980, **prior approval** of the **Central Government** is essential for **diversion of forest lands for the non-forestry purposes**. State Governments were deprived of this power to allow diversion of forest land.
- The **basic objective** of the Act is to regulate the indiscriminate diversion of forest lands for non forestry uses and to **maintain a balance between** the developmental needs of the country and the conservation of forests which provide significant services to human beings and biodiversity.

#### **Impact of the Act:**

- The Act has succeeded in controlling the indiscriminate release of forest land for non forestry purposes.
- Prior to 1980, the rate of diversion of forest lands for non forestry purposes was about 1.43 lakh ha. per annum. But, with the advent of the Forest (Conservation) Act, 1980, the rate of diversion of forest lands has come down to around 15000 ha. per annum.
- Diversion of forest land is mostly allowed to meet the developmental needs for Drinking water projects, Irrigation projects, Transmission lines, Railway lines, Roads, Power projects, Defense related projects, Mining etc.

#### **Compensatory Levies and Net Present Value (NPV):**

- For diversion of forest lands to non-forest purposes, user agencies should pay compensatory levy for loss of forest land and Net Present Value for ecosystem services lost permanently lost due to diversion of forest land.

#### **Compensatory Levy:**

- As per the Forest (Conservation) Act 1980 **whenever a forest land is to be diverted for non-forestry purposes, the equivalent non forest land** has to be identified for compensatory afforestation. Funds for raising compensatory afforestation are collected through Compensatory Levy on user agencies for whom forest land is allotted.

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### **Net Present Value (NPV):**

- In addition to Compensatory Levy, user agencies which are allotted forest lands are also required to pay Net Present Value (NPV).
- NPV is collected in addition to compensatory levy because when forests are diverted, a whole set of benefits (tangible and intangible) flowing from forests in terms of ecosystem goods and services are lost which are not accounted for by CA.
- Benefits from CA increase slowly and the rationale for NPV collection is to balance the uncompensated benefits till the compensatory afforestation area attains maturity and starts providing a portion of benefits provided earlier by the forest area diverted. Even after maturity, it is likely that a portion of benefits lost due to forest diversion will never be compensated by benefits from compensatory afforestation.
- The money collected under (Net Present Value NPV) is utilized for undertaking forest protection, other conservation measures and related activities

### **Compensatory Afforestation Management and Planning Authority (CAMPA):**

- It is an authority constituted at the national level to monitor the effective implementation of the compensatory afforestation in the country.
- It receives all the funds collected from user agencies towards compensatory afforestation, , penal compensatory afforestation, Net Present Value (NPV) and all other amounts recovered from such agencies under the Forest (Conservation) Act, 1980.

### **Ecosystem Services provided by Forests (Why Forests should be conserved?):**

- Forest ecosystems provide significant services to human beings and biodiversity.
- The ecosystem services provided by forests are
  1. **provisioning services** such as food (fruits, honey, etc), water, timber;
  2. **regulating services** such as climate and water quality regulation;
  3. **supporting services** such as nutrient cycling, soil formation; and
  4. **cultural services** such as recreation and spiritual benefits.
- Ensuring flow of these services from forests has significant implications on human well-being.

### **Proposed Amendments and Reasons:**

- The word 'Forest' is not clearly defined in the Forest Acts (Forest Act, 1927 and Forest Conservation Act, 1980) due to wide diversity of forests in the country. Hence, under the Act State Governments have been conferred powers to notify forests.
- As a result, there are forests which are notified by the Governments. There are also forests which are not notified but recorded as forests in the Government records. There are also forests which are owned by private individuals.
- The lack of proper definition of forests also led to many litigations in the courts. In 1996, the Supreme Court in the Godavarman Thirumulkpad vs Union Of India & Ors case widened the definition of the word 'forest' to include the dictionary meaning i.e. any large land area covered with trees. With the Supreme Court judgement, this definition was accepted by and made as part of rules framed under the Forest Conservation Act.
- Hence, the Government proposed amendments to Forest Conservation Act, 1980 to address the practical problems in the implementation of the Act.

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## **Proposed Amendments:**

### **1. Land Acquired before 1980 to be Exempt from the Purview of the Act:**

Infrastructure Ministries like Railways, Roads have acquired lands prior to 1980 for construction of roads and laying railway lines. Part of the land was used and the remaining was left for future constructions and expansions.

Trees or forest existing on the leftover acquired land were left as such (prior to 1980) and further the blank areas were planted under different government schemes. In order to ensure protection to such plantations over the acquired land, in quite a few cases, these were notified as protected forests.

With the enactment of the Act and further clarification on its scope of applicability by Supreme Court, all such land is considered as forest and requires prior approval of Government of India for the non-forestry use (laying railway lines and roads). The Ministries holding these lands have to pay compensatory levies for undertaking compensatory Afforestation if they want to undertake construction/expansion in the lands they hold. Thus the lands they hold are treated as forests even though they were acquired for non-forest purposes prior to the enactment of Forest Conservation Act, 1980. Hence, the Environment Ministry proposed to exempt such lands acquired before 1980 from the purview of the Act.

### **2. Exemption for Access Facilities:**

Alongside many roads and railway lines, strip plantations have been developed and notified as forests. In many areas road/rail side amenities/habitations have been developed all along such lands. These facilities (both private and government) need access (approach roads/rail) which invariably passes through the strip of notified forest area along the road/rail line. Since the activity is a non-forestry use of forest land, these require prior approval of Central Government. Environment Ministry proposed an exemption up to 0.05ha for each such accesses to alleviate the hardship of the residents/business owners.

### **3. Prohibition of Diversion of Pristine Forests:**

Current provisions of the Forest Conservation Act are regulatory and not prohibitory i.e. they regulate diversion of forest land for non-forestry uses but do not prohibit diversion of forest land. Thus there are no provisions in the Act for prohibiting non-forestry use of certain areas which require higher degree of protection (pristine forests) due to their uniqueness and high landscape integrated value.

Hence, the Environment Ministry is considering introducing an enabling provision in the Act to keep certain pristine forests showcasing rich ecological values intact for a specific period.

### **4. Exemption of Land Required for Border Infrastructure Projects:**

Development of infrastructure along the international border areas, which are crucial for keeping our borders, are getting delayed wherever approval is needed for non-forestry use of forest land. Hence, the Union Government proposed exemption of such projects from obtaining prior approval of Central Government under the provision of the Act and allow the States to permit non-forest use of forest land for implementation of such strategic and security projects.

### **5. Keeping environment-friendly technology outside the purview of the Act:**

New technologies such as Extended Reach Drilling (ERD) enable exploration or extraction of oil & natural gas deep beneath the forest land by making drilling holes from outside the forest areas and without impacting the soil or aquifer that supports the forest in the forest land. The Environment Ministry proposes that use of such environment-friendly technology should be kept outside the purview of Act.

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## 6. Removal of Double Compensatory Levy:

At present, when forests are diverted for purposes like mining, the mine owners should be pay compensatory levy at the time of initial allocation as well as renewal of mining lease. Such a measure is not seen as rational and hence the Ministry proposed removal of double compensatory levy.

### ***New Tiger Reserve:***

#### **New Tiger Reserve in Chhattisgarh**

- In October 2021, the National Tiger Conservation Authority (NCTA) approved the Chhattisgarh Government's proposal to declare the combined areas of the Guru Ghasidas National Park and Tamor Pingla Wildlife Sanctuary as a **Tiger Reserve**.
- Under Section 38 of The Wildlife (Protection) Act, 1972, a State Government shall notify an area as a tiger reserve on the recommendation of the National Tiger Conservation Authority (NTCA) constituted under the act.

#### **About the New Reserve:**

- The new Reserve is located in the northern part of the state, bordering Madhya Pradesh and Jharkhand.
- This will be the **fourth Tiger Reserve** in Chhattisgarh, after the **Udanti-Sitanadi, Achanakmar, and Indravati Reserves**.
- The new reserve connects Madhya Pradesh and Jharkhand and provides the tigers with a corridor to move between the Palamau (Jharkhand) and Bandhavgarh (Madhya Pradesh) reserves.

#### **Benefits of Tiger Reserve:**

- Once an area is declared as a tiger reserve, **tiger conservation** becomes the **collective responsibility** of Central and concerned State Government.
- Both Central and State Governments formulate tiger conservation plans by allocating financial resources. Such plans focus on creation of core zone and buffer zone in tiger reserves.
- Core zone is critical habitat of tigers and kept inviolate for their conservation. Buffer zone is adjoining area of core zone where co-existence of wildlife and human activity is allowed.
- Other focus areas of tiger conservation plan include undertaking anti-poaching activities, improving tiger habitat, addressing man-animal conflict issues, etc.

#### **Why Tigers should be conserved?**

##### **1. Umbrella Species:**

The tiger is an umbrella species and hence plays a **pivotal role** in the **health and diversity of forest ecosystem**.

Being the dominant predators of the ecosystem, tigers ensure that the numbers of herbivores like deer, wild boar, water buffalo, blue bull, etc are kept balanced.

##### **2. Ecological Balance:**

Forests have a huge role to play in **preserving ecosystem services** clean air, water, pollination, temperature regulation etc.

A steep fall in tiger population could lead to a rise in herbivore population. This would potentially destroy forests as these herbivores consume the trees and plants. As a result ecosystem services rendered by forests will be under threat.

As forests also act as carbon sinks, depletion of forests will reduce the carbon storage capacity.

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## **Threats for Tiger population:**

### **1. Poaching:**

Poaching (illegal killing) is biggest threat to tigers. They are killed for their skin, meat, bones, teeth, claws. Skin, teeth, claws are used as status symbols. Bones are used in traditional medicine in countries like China. Meat is consumed.

### **2. Loss of habitat:**

Tiger habitats are shrinking and undergoing fragmentation due to encroachment of their habitats for agriculture, plantations, timber logging, human settlements and access routes.

Shrinking habitats lead to human-tiger conflicts as tigers roam to find new habitats and also result in inbreeding in small populations which can reduce genetic diversity.

## **India's Efforts towards tiger conservation:**

- Realising the significance of tiger conservation, Government of India started 'Project Tiger' in 1973.
- Under the 'Project Tiger' initiative, the number of tiger reserve has been increased from 9 to 52 tiger reserves at present.
- Tiger reserves cover 2.2 per cent of India's geographical area.
- In India, tigers inhabit a wide variety of habitats ranging from the high mountains, mangrove swamps, tall grasslands, to dry and moist deciduous forests, as well as evergreen and shola forest systems.

## **Tiger population in India:**

- India's tiger population now stands at 2967 as per India's Tiger Survey 2018.
- India is home to 70per cent of the world's tiger population.
- Madhya Pradesh has the highest number of tigers at 526, closely followed by Karnataka (524) and Uttarakhand (442).

## ***CBD:***

### **15th COP to Convention on Biological Diversity (CBD)**

- The first part of 15th meeting of Conference of Parties (COP) to Convention on Biological Diversity (CBD) was held virtually in Kunming, China in October 2021.

## **Background:**

### **What is Biodiversity?**

- The term biodiversity (shortened form for biological diversity) refers to variety of life on earth (plants, animals and microorganisms) and includes
- Genetic diversity (diversity of genetic structure with in the same species),
- Species diversity (diversity of species), and
- Ecosystem diversity (diversity of habitats and variation in their habitats).

### **What is the significance of biodiversity?**

- The Earth's biological resources (biodiversity) are vital to humanity's economic and social development.
- Biodiversity provides following ecosystem services to human beings.
- Provision of food, fuel and fibre
- Purification of air and water

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- Stabilisation and moderation of the Earth's climate
  - Moderation of floods, droughts, temperature extremes and the forces of wind
  - Pollination of plants, including many crops
  - Maintenance of genetic resources which are key inputs to **crop varieties, livestock breeds, medicines, etc.**
  - Cultural and aesthetic benefits.

#### **Threats due to Biodiversity loss:**

- The **loss of biodiversity reduces the productivity of ecosystems** and thereby shrinks nature's basket of goods and services.
- It also **destabilises** ecosystems, and weakens their ability to deal with natural disasters such as floods, droughts, and hurricanes.

#### **What is Convention on Biodiversity (CBD)?**

- It an **international legal instrument** for the **conservation** and **sustainable** use of biological diversity.

#### **Why was CBD signed?**

- Economic development is essential to meeting human needs.
- But, there is increasing threat to biodiversity due to impact of human pressure who are consuming more resources than ever before. This upsets the balance of ecosystems.
- The pace of species extinction has accelerated dramatically. Ecosystems are being fragmented or eliminated leading to decline or extinction of innumerable species.
- The loss of biodiversity reduces the productivity of ecosystems, and thereby shrinks nature's basket of goods and services.
- Hence, sustainable use of nature is essential for the long-term success of development strategies.
- Such conservation and sustainable use of biodiversity is also necessary to ensure that the needs of future generations are not under threat.
- ensures that the development needs of both the present and future generations are met. The Convention on Biological Diversity was signed keeping this as goal.

#### **Objectives of Convention on Biological Diversity (CBD):**

- It has 3 main objectives:
- conservation of biological diversity,
- sustainable use of the components of biological diversity, and
- fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
- The Convention on Biological Diversity (CBD) came into force on 29th December 1993. It has near universal membership with ratification by 195 countries.

#### **What is Conference of Parties on CBD?**

- Countries which have signed the Convention on Biological Diversity (CBD) meet periodically to review the implementation of measures agreed under the Convention. Countries which signed the treaty are called parties to the convention. Their meeting is called conference of parties

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### What is the Objective of the 15th COP to CBD?

- The objective of 15th COP to CBD was to adopt Strategic Plan 2020-30 which will contain measures to be taken by member countries for the period 2020-30.
- Adoption of strategic plan was necessary as the present plan Strategic Plan 2011-2020 has ended. The 15th COP was to be held in 2020 but was postponed due to COVID-19. The present meeting held in Kunming, China was first part. The final meeting will be held in 2022 which will adopt Strategic Plan for 2020-30. The deliberations from part one of the meeting held now will be used as inputs for the strategic plan to be adopted in 2022.

### Strategic Plan 2011-2020:

- The strategic plan 2011-2020 aims to achieve the objectives of CBD aims by
- addressing the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society,
- reducing the direct pressures on biodiversity and promote sustainable use, and
- improving the status of biodiversity by safeguarding ecosystems, species and genetic diversity.
- Countries which are party to the convention should develop national strategies, plans or programmes to achieve the above goals.

### Additional Protocols to the CBD:

- Two additional protocols (subsidiary agreements) to CBD have also been adopted namely
- Cartagena Protocol on Biosafety, and
- Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation

### The Cartagena Biosafety Protocol

- Advances in biotechnology techniques have enabled us to cross the species barrier by transferring genes from one species to another. There are now transgenic plants, such as tomatoes and strawberries that have been modified using a gene from a cold water fish to protect the plants from frost. Some varieties of potato and corn have received genes from a bacterium that enables them to produce their own insecticide, thus reducing the need to spray chemical insecticides. Other plants have been modified to tolerate herbicides sprayed to kill weeds. Living Modified Organisms (LMOs) - often known as genetically modified organisms (GMOs) - are becoming part of an increasing number of products, including foods and food additives, beverages, drugs.
- **Biotechnology** is being promoted as a better way to **grow crops and produce medicines**, but it has raised concerns about potential side effects on human health and the environment, including risks to biological diversity. In some countries, genetically altered agricultural products have been sold without much debate, while in others, there have been vocal protests against their use, particularly when they are sold without being identified as genetically modified.
- In response to these concerns, governments negotiated a subsidiary agreement to the Convention to address the potential risks posed by cross-border trade and accidental releases of LMOs. Adopted in January 2000, the **Cartagena Protocol on Biosafety allows** governments to signal whether or not they are willing to accept imports of agricultural commodities that include LMOs.
- In addition, commodities that may contain LMOs are to be clearly labeled as such when being exported. The aim is to ensure that recipient countries have both the opportunity and the capacity to assess risks involving the products of modern biotechnology.

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### **Nagoya Protocol on sharing the benefits of genetic resources**

- An important part of the biodiversity debate involves access to and sharing of the benefits arising out of the commercial and other utilisation of genetic material, such as pharmaceutical products.
- Most of the world's biodiversity is found in developing countries, which consider it a resource for fuelling their economic and social development. Historically, plant genetic resources were collected for commercial use outside their region of origin or as inputs in plant breeding. Foreign bioprospectors have searched for natural substances to develop new commercial products, such drugs. Often, the products would be sold and protected by patents or other intellectual property rights, **without fair benefits to the source countries.**
- Hence, the Nagoya Protocol on Access and Benefit Sharing was adopted by the Conference of the Parties to the CBD in 2010 in Nagoya, Japan, and came into force in October 2014.
- The treaty recognises national sovereignty over all genetic resources, and provides that access to **valuable biological resources be carried out on "mutually agreed terms" and subject to the "prior informed consent" of the country of origin.**
- When a microorganism, plant, or animal is used for a commercial application, the **country from which it came has the right to benefit.** Such benefits can include cash, samples of what is collected, the participation or training of national researchers, the transfer of biotechnology equipment and know-how, and shares of any profits from the use of the resources.

### ***Marine Protected Areas:***

#### **India Supports Designation of East Antarctica and Weddel Sea as Marine Protected Areas**

- India co-sponsored the proposal of the European Union for designating **East Antarctica** and the **Wendell Sea** as Marine Protected Areas (MPAs).

#### **What are Marine Protected Areas?**

- Marine Protected Areas (MPAs) are **similar to protected areas on land** like national parks and wildlife sanctuaries and are meant to protect marine biodiversity.
- An MPA is essentially a space in the oceans and seas where human activities are more strictly regulated than the surrounding waters
- It provides protection for all or part of its natural resources.
- Certain activities within an MPA are limited or prohibited to meet specific conservation, habitat protection, ecosystem monitoring, or fisheries management objectives.
- MPAs are now perceived as among the key tools for conserving biodiversity, increasing productivity and improving the resilience and ability of marine ecosystems to respond to changing oceanic biophysical conditions.
- Growing threats to marine biodiversity stem from fishing practices, shipping and land-based sources of pollution like plastics, nutrients and noise, and the potential effects of seabed mining.
- In addition, increases in CO<sub>2</sub> have resulted in rising ocean acidity, declining oxygen levels, warming waters and shifting current patterns. These combined stressors are undermining the health and resilience of marine ecosystems and species around the world.
- The proposal to designate East Antarctica and the Weddell Sea as MPAs was first put forth to the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) in 2020.

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- CCAMLR is an international treaty to manage Antarctic fisheries to preserve species diversity and stability of the entire Antarctic marine ecosystem. It came into force in April 1982. India has been a permanent member of the CCAMLR since 1986.



### About Antarctica:

- Antarctica, one of the seven continents of the world located on southern most side of the globe, is a vast ice-covered landmass surrounded by seas. Weddel Sea and Rose Sea are the two principal seas surrounding Antarctica.
- Antarctica is about 5.5 million square miles (14.2 million square km) in size, and thick ice covers about 98 percent of the land.
- It is the world's highest, driest, windiest and coldest continent. Its record low temperature is  $-94^{\circ}\text{C}$ . But it does not actually snow much. Antarctic is so dry it's classed as a polar desert.
- The continent is divided into **East Antarctica** (which is largely composed of a high ice-covered plateau) and West Antarctica (which is largely an ice sheet covering an archipelago of mountainous islands).
- There are no people permanently living or native to Antarctica.
- Around 5,000 scientists and researchers are based there. About 30,000 tourists visit per year.

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## **MISCELLANEOUS (AWARDS, SPORTS)**

### **INTERNATIONAL AWARDS**

#### ***Nobel Prizes 2021:***

Nobel Prizes 2021 were announced in October 2021.

#### **PHYSICS:**

**Contributions Recognised:** Discoveries which demonstrate that our knowledge about the climate rests on a solid scientific foundation.

#### **Syukuro Manabe and Klaus Hasselmann:**

Their work laid the foundation of our knowledge of the Earth's climate and how humanity influences it.

They contributed to building **climate models** which prove that the increased temperature in the atmosphere (global warming) is due to human emissions of carbon dioxide.

#### **Giorgio Parisi:**

He discovered hidden patterns in the behaviour of complex materials. Complex materials are nano-structured materials with combinations of structure that lead to performance surpassing the sum of their individual components

Giorgio Parisi's work is now considered to be among the most important contributions to the theory of complex systems. Complex systems in physics are characterised by randomness and disorder and are difficult to understand.

#### **CHEMISTRY:**

**Contributions Recognised:** development of a precise new tool for molecular construction called organocatalysis.

#### **Contributors:** Benjamin List and David MacMillan:

Their work on organocatalysis has had a great impact on pharmaceutical research making the drug production cheaper and quicker.

Catalysts are substances that control and accelerate chemical reactions, without becoming part of the final product.

Organocatalysis is a form of catalysis in which the rate of a chemical reaction is increased by an organic catalyst. This "organocatalyst" consists of carbon, hydrogen, sulphur and other nonmetal elements found in organic compounds.

There is rapid expansion in the use of organic catalysts primarily due to their ability to drive asymmetric catalysis. When molecules are being built, situations often occur where two different molecules can form, which - just like our hands - are each other's mirror image. Chemists will often only want one of these, particularly when producing pharmaceuticals. Asymmetric catalysis enables production of only desired molecules.

Due to this advantage, organocatalysis has developed at an astounding speed since 2000. Using these organocatalysis reactions, researchers can now more efficiently construct anything from **new pharmaceuticals to molecules that can capture light in solar cells, store energy in batteries, molecules that can make lightweight running shoes or inhibit the progress of disease in the body.** Thus organocatalysis is bringing the greatest benefit to humankind.

#### **PHYSIOLOGY OR MEDICINE:**

**Contributions Recognised:** discoveries of receptors for temperature and touch.

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**Contributors:** David Julius and Ardem Patapoutian

Our ability to sense heat, cold and touch is essential for survival and underpins our interaction with the world around us. David Julius and Ardem Patapoutian discovered how nerve impulses are initiated through electrical impulses so that temperature and pressure can be perceived.

David Julius utilised capsaicin, a pungent compound from chill peppers that induces a burning sensation, to identify a sensor in the nerve endings of the skin that responds to heat.

Ardem Patapoutian used pressure-sensitive cells to discover a novel class of sensors that respond to mechanical stimuli in the skin and internal organs. These breakthrough discoveries launched intense research activities leading to a rapid increase in our understanding **of how our nervous system senses heat, cold, and mechanical stimuli.**

#### **LITERATURE:**

The Nobel Prize in Literature 2021 was awarded to **Abdulrazak Gurnah** (born in Zanzibar a semi-autonomous territory of **Tanzania** and living in England at present) for his work on effects of colonialism and the fate of the refugee in the gulf between cultures and continents.

#### **PEACE:**

The Nobel Peace Prize 2021 was awarded jointly to two journalists **Maria Ressa** (Philippines) and **Dmitry Andrejevich Muratov** (Russia) for their efforts to safeguard freedom of expression, which is essential for a democracy. They used freedom of expression to expose abuse of power and growing authoritarianism in their countries.

#### **ECONOMICS:**

This was not the prize conceived by Alfred Nobel in his will. It is given Sveriges Riksbank, Sweden's central bank in memory of Alfred Nobel.

#### **Contributions Recognised:**

- a) contributions to labour economics by **David Card**, and
- b) analysis of causal relationships by Joshua D. Angrist and Guido W. Imbens

#### **David Card's Work:**

In the early 1990s, the conventional wisdom among economists was that higher minimum wages lead to lower employment because they increase wage costs for businesses. However, the evidence supporting this conclusion was not fully convincing.

David Card work focused on impact of higher minimum wages on employment. His research found that an increase in the minimum wage had no effect on the number of employees. One major reason is companies can transfer increased costs to consumers in the form of higher prices, without significant reductions in demand.

#### **About Nobel Prizes:**

Nobel Prizes, named after Alfred Nobel who was an inventor, entrepreneur, scientist and businessman from Sweden, are the prestigious international awards which are being awarded since 1901. These were instituted by 'The Nobel Foundation', a private institution established in 1900, which was entrusted with the responsibility for fulfilling the intentions in Alfred Nobel's will.

He left the majority of his fortune to the establishment of prizes in 5 categories: physics, chemistry, physiology or medicine, literature and peace. His will stated that the prizes should be awarded to "those who, during the preceding year, shall have conferred the greatest benefit to humankind."?

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In 1968, Sveriges Riksbank (Sweden's central bank) established the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.

Alfred Nobel invented dynamite, nitroglycerine-based explosive which is widely used in the mining, quarrying, construction, and demolition industries. The fortune of Alfred Nobel was converted in to money and invested in securities as per his will. The interest earned on that securities is used to fund the Nobel Prizes.

In 2021, the prize amount for each category was Swedish kronor (SEK) 10.0 million (around Rs. 8.2 crore).

**Sakharov Prize 2021:**

Alexei Navalny, imprisoned Russian Opposition leader, was awarded the European Union's top human rights prize in October 2021.

Instituted in 1988, the Sakharov Prize for Freedom of Thought is the highest tribute paid by the European Union to human rights work. It gives recognition to individuals, groups and organisations that have made an outstanding contribution to protecting freedom of thought.

Past winners include Nelson Mandela, Malala Yousafzai, Denis Mukwege and Nadia Murad, etc.

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## **SPORTS**

### **Chess:**

***FIDE World Women's Team Chess Title (Spain, 2021 October)***

Russia - Winner

India - Runner

### **Football:**

***SAFF Championships title (Male, October, 2021)***

India - Winner

Nepal - Runner

### **Cricket:**

***Indian Premier League-IPL 14th Season (Dubai, 2021 October)***

Chennai Super Kings - Winner

Kolkata Knight Riders - Runner

### **Archery:**

***40th NTPC National archery championships (Jamshedpur, 2021 October)***

#### **Men:**

Abhishek Verma (Delhi) - Winner

Mohit (Haryana) - Runner

#### **Women:**

V. Jyothi Surekha (PSPB) - Winner

Muskan Kirar (MP) - Runner

#### **Mixed team:**

AIP - Winner

Delhi - Runner

#### **Formula One:**

***United States Grand Prix (2021 October)***

Max Verstappen - Winner

Lewis Hamilton - Runner

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