

# CivilsTap

Quality & Affordable Education



# Current Affairs

## Monthly Magazine

APRIL 2024



By CivilsTap Himachal

For HPAS & Other Competitive  
Exam in Himachal Pradesh

**Mains**

# Contents

---

<b>CONTENTS</b>	<b>2</b>	Organisational Structure of WTO	40
<b>SOCIETY, CULTURE</b>	<b>4</b>	Significance of the WTO	40
The Determinant in 'More Women in the Job Market'	4	Challenges and Criticisms Ahead of WTO	40
Young and the old – lancet report on fertility rate	6	Challenges Specific to India	41
<b>POLITY, CONSTITUTION AND GOVERNANCE</b>	<b>8</b>	Suggested Reforms in the WTO	41
Rules Notified for Citizenship Amendment Act (CAA), 2019	8	Conclusion and Way Forward	42
India's Disability Law	9	Legalising the Minimum Support Price (MSP)	42
19th Foundation Day of NCPCR	11	42	
Kovind Panel submitted Report on Simultaneous Election	12	Minimum Support Price (MSP)	42
Levels and Trends in Child Mortality: UN Report	13	Current Status of MSP	42
Persistent Federal Frictions	16	Demand for Legal Guarantee	43
Social Protection Architecture in India	18	Arguments Favouring Legalising MSP	43
<b>INTERNATIONAL</b>	<b>21</b>	Arguments Against Legalising MSP	43
India – Mauritius Relations	21	Government's Stand	43
Pancheshwar Multipurpose Project (PMP)	23	Conclusion	44
G4 model for UNSC Reforms	24	Gender parity in Green jobs	44
MoU between India and Bhutan	26	Lack of Regulations & Security Benefits for Gigs: Study	45
India and Brazil 2+2 Dialogue	28	Human Development Report 2023- 24	46
Indo-Bhutan Ties: A Strong Partnership	29	Poverty Estimation in India	48
<b>SOCIAL ISSUES</b>	<b>31</b>	Gender Inequality Index 2022	50
A Women's Urban Employment Guarantee Act	31	Financial Inclusion of Women	51
Current Scenario (Unmet Demand)	31	Economic Inequality in India	53
Causes and Reasons for Urban Unemployment Among Women in India	31	Inter-Ministerial Joint Workshop on Blue Economy	54
Possible Solution Proposed	32	Scope of Semiconductors industry	56
Vision for WUEGA	32	Employment Scenario in India	58
Conclusion and Way Forward	32	<b>SCIENCE AND TECHNOLOGY</b>	<b>60</b>
Drop-in Fertility Rate in India	33	Setting up three New Semiconductors Plants in India	60
Women Representation in Politics	34	Indigenous Prototype Fast Breeder Reactor (PFBR)	61
<b>ECONOMY</b>	<b>37</b>	Nuclear Energy program in India	62
White Revolution 2.0	37	IndiaAI Mission	65
The 13th Ministerial Conference of WTO	39	Agni-V Missile Equipped with MIRV Technology	65
WTO (World Trade Organisation)	39	Samudrayaan Mission	67
Formation of WTO	39	Private Industry in Space Sector	68
		Sickle Cell Anaemia & CRISPR Technology	69
		<b>ENVIRONMENT</b>	<b>71</b>

Disclosure Framework on Climate-related Financial Risks, 2024	71
Global warming and Impact on India	72
MethaneSAT	73
Rising Global Sea Surface Temperature	73
Why do Global Sea Surface Temperatures Matter?	74
Solar Waste	77
India's Plastic Waste Management (Amendment) Rules, 2024	78
Climate Finance	81



# GENERAL STUDIES 1.

## SOCIETY, CULTURE

### THE DETERMINANT IN 'MORE WOMEN IN THE JOB MARKET'

**Context:** There is growing demand from social scientists, governments and international organisations that women's participation in the economy/labour market should increase to promote economic growth of India.

#### About the Women Workforce in India

- ❖ The participation of women in the workforce is a critical indicator of a nation's economic health and social progress.
- ❖ In India, the female labour force has been a subject of extensive research and policy discussions.
- ❖ According to the **Periodic Labour Force Survey (PLFS)** conducted by the **National Statistical Office (NSO)**, the estimated **Worker Population Ratio (WPR)** for women **aged 15 years and above** was 28.7% in 2019-20.
- ❖ However, the **latest PLFS report** shows an **increasing trend** in the Labour Force Participation Rate (LFPR) for women, which was **32.8% in 2021-22**.
  - ✓ However, this **rate is still lower than the global average** of 47% and significantly lower than countries like China, which has a female LFPR of 60%. It remains **lower than some of its neighbours** in South Asia such as Sri Lanka and Bangladesh.

#### Opportunities For Women in the Job Market

- ❖ The career opportunities for women in India are on the rise.
- ❖ India's female labour force participation rate has been on a downtrend, declining from 32.0% in 2005 to 19.2% as of 2021.
  - ✓ However, the potential for women in the job market in India is immense and largely untapped.
- ❖ **Emerging Opportunities:** The **gig and platform economy** offers flexibility and freelancing jobs. Women form a very large proportion of this segment.
- ❖ **Sectors with Potential:** According to **United Nations Women** estimates, women make up a significant proportion of all healthcare workers and more than 80% of nurses and midwives.
  - ✓ Women also form a significant proportion of the workforce in the education sector in India, especially in primary education and early childhood care.
- ❖ **The Role of Education:** As women with higher education and professional qualifications in India tend to participate more in the labour market, it is argued by experts that greater women's education will raise their participation rate in the labour market.

#### Challenges For Women in the Job Market

- ❖ Despite the progress made in recent years, women in India continue to face significant challenges in the job market. These challenges range from societal norms and expectations to structural and policy issues.
- ❖ **Societal Norms and Expectations:** The root cause of many challenges faced by women in the job market is the **patriarchal society**, where men are considered to be the breadwinners and women are expected to be the homemakers.
  - ✓ **Patriarchy:** The root cause of low women's participation in the labour market in India is **patriarchy, a social system marked by the supremacy of the father/man in the family, community, and society**.
  - ✓ This societal construct often discourages women from entering the labour market and confines them to low productivity and inferior kind of work.
- ❖ **Lack of Equal Opportunities:** Women often face a lack of equal opportunities in the job market. It includes limited access to higher-paying jobs and leadership roles.

- ✓ The gender pay gap is another significant issue, with women globally being paid about 20% less than men.
- ❖ **Career Gap and Rejoining the Workforce:** Women often find it difficult to overcome career gaps and rejoin the workforce.
  - ✓ This is particularly true for women who take a break from their careers for reasons such as childbirth or caregiving.
- ❖ **Barriers in Leadership:** Women face significant barriers in attaining leadership positions.
  - ✓ These barriers can be attributed to unconscious gender stereotypes and biases that often favour men for leadership roles.
- ❖ **Work-Life Balance:** Achieving a work-life balance is another major challenge for women.
  - ✓ Women often carry the burden of being a caregiver, which leads to concerns around work-life balance.

### Related Government Initiatives

- ❖ **The Pradhan Mantri Awas Yojana (PMAY):** It has been a significant initiative in empowering women in India, aimed at providing affordable housing to the urban poor, has had a substantial impact on women's empowerment.
  - ✓ **Ownership:** Of the total number of houses provided under PMAY, the ownership of **80% of them belongs to women**. It is a significant step towards ensuring financial security and independence for women.
  - ✓ **Rural Impact:** Over 70% of the houses under PM Awas Yojana Gramin have been given to women from rural areas. It highlights the government's commitment to uplift the rural women population.
- ❖ **PM SVANidhi Scheme:** It was launched by the Ministry of Housing and Urban Affairs, is a micro-credit scheme for street vendors.
  - ✓ It aims to facilitate collateral-free working capital loans to street vendors to restart their businesses, which were adversely impacted by the COVID-19 pandemic.
  - ✓ **Impact on Women:** The PM SVANidhi scheme has proven to be a **gender equaliser** and has helped promote **'inclusive entrepreneurship'**.
- ❖ **The Lakhpati Didi initiative:** It is a significant step towards the economic empowerment of women in India. It encourages each Self Help Group (SHG) household to take up multiple livelihood activities coupled with value chain interventions, resulting in a sustainable income of Rupees One Lakh or more per year.
  - ✓ It has had a transformative impact on the rural socio-economic landscape, with 83 lakh SHGs involving nine crore women.
- ❖ **The NaMo Drone Didi initiative:** It is a significant step towards the economic empowerment of women in India. It aims to provide drones to 15,000 women Self Help Groups (SHGs) for rental services to farmers.

### Other Key Steps/Initiatives

- ❖ **Maternity Benefit (Amendment) Act, 2017:** It provides for enhancement in paid maternity leave **from 12 weeks to 26 weeks** and provisions for mandatory crèche facility in establishments having 50 or more employees.
- ❖ **Night Shifts for Women:** An advisory has been issued to the States under the **Factories Act, 1948** for permitting women workers in the night shifts with adequate safety measures.
- ❖ **Skill India Mission:** To enhance the employability of female workers, the Government is providing training to them through a network of Women Industrial Training Institutes, National Vocational Training Institutes, and Regional Vocational Training Institutes.
- ❖ **Pradhan Mantri Mudra Yojana and Stand Up India:** These schemes help women to set up their own enterprise.
- ❖ **Pradhan Mantri Ujjwala Yojna (PMUY):** This scheme aims to safeguard the health of women by providing them with clean cooking fuel and also reduce burden on them from drudgery of collecting firewood.

- ❖ **MGNREGA (2005):** It mandates that **at least one third of the jobs** generated under the scheme should be given to **women**.
- ❖ **Safety and Security:** Initiatives like the **One-Stop Centre Scheme** and **Women Helpline** provide integrated support to women affected by violence.
- ❖ **Financial Inclusion and Entrepreneurship:** Schemes like **Sukanya Samridhi Yojana** and **Stand Up India** encourage financial independence and entrepreneurship among women.

### Conclusion and Way Forward

- ❖ By addressing the root cause of patriarchy, promoting education for women, and reducing the burden of unpaid domestic work, we can hope to see an increase in women's participation in the labour market, leading to economic growth and prosperity.
  - ✓ It is believed that when women's participation rate, which is one of the lowest in Asia, increases, it will bring prosperity to the Indian economy.
- ❖ With concerted efforts and targeted strategies along with a change in attitudes, women can take advantage of these new labour market opportunities.

### YOUNG AND THE OLD – LANCET REPORT ON FERTILITY RATE

**Context:** According to medical journal Lancet, India's TFR will fall to 1.29 in 2050. One in five persons in India will be above the age of 60 in 2050. This highlights that India's demographic dividend is not for perpetuity.

#### What is Total Fertility rate and Replacement level?

- ❖ **TFR**– It is the average number of children that are born to a woman (15-49 years) over her lifetime.
- ❖ **Replacement level**– It is the level of fertility at which a population exactly replaces itself from one generation to the next. A TFR of 2.1 is known as replacement rate.

#### What are the key highlights of the lancet study?

1. **Decline in TFR**– India's TFR has fallen to 1.29 well below the replacement rate of 2.1.
2. **Ageing factor**– One in five persons in India will be above the age of 60 in 2050. Further as per the UN Population Fund's (UNPF) India Ageing Report, the number of elderly in India will more than double from 149 million in 2022 to 347 million by mid-century.
3. **About China**- China's TFR had dropped to a record low and its working-age population had contracted by more than 40 million.

#### What are the consequences of declining fertility rate?

1. **Increase in aged population**– By 2050, over 20% of India's population will be senior citizens, it poses challenges related to care, support, and health care.
2. **Shrinking Workforce**– A smaller working age population could lead to labour shortages and affect economic growth. For ex- working-age population of China had contracted by more than 40 million.
3. **Endanger Demographic Dividend**- Experiences of developed nations suggests that once fertility rates fall below the replacement rate, it's almost impossible to set them back. India's TFR is 1.9 which is currently just below the replacement rate. Further, as per UNPF calculations, the share of the country's working-age population will peak in the late 2030s and early 40s. Thus, in the background of these population trends, it is important to reap India's full demographic dividend.

#### What should be the way forward?

1. **Skill Development**-There is an urgent need to overcome skill deficits and plug gaps in the knowledge economy.
2. **Diversifying employment pattern**-There should be creation of jobs outside of agriculture. Further, the jobs must not be in the low-paid informal sector.
3. **Social security measures**– The government should ensure adequate social security and healthcare provisions for the growing elderly population. Along with this, the government should create opportunities for the elderly population to harness their skills effectively.

4. **Addressing regional imbalance**-TFR rate is not uniform across all Indian states. For ex- parts of south India and west India are greying faster than those in the north. Thus, the policymakers should acknowledge the demographic imbalance in all its dimensions and prepare for the change.



# GENERAL STUDIES 2.

## POLITY, CONSTITUTION AND GOVERNANCE

### RULES NOTIFIED FOR CITIZENSHIP AMENDMENT ACT (CAA), 2019

**Context:** The **Ministry of Home Affairs** notified the Citizenship Amendment Rules under the **Citizenship Amendment Act (CAA)** which was enacted in December 2019.

#### Background

- ❖ In December 2019, Parliament passed an amendment to The **Citizenship Act, 1955**, to include a provision for grant of **citizenship to migrants belonging to the Hindu, Sikh, Buddhist, Jain, Parsi, or Christian communities** who entered India before **December 31, 2014 from Pakistan, Afghanistan, or Bangladesh**.
- ❖ The law was notified on January 10, 2020 amidst protests around the country, particularly in Assam, **but could not be implemented in the absence of the Rules**.
- ❖ On May 28, 2021, the Union government issued an order under Section 16 The Citizenship Act, 1955, **giving district collectors in 13 districts with high migrant populations the power to accept citizenship applications** from groups identified in the 2019 amendment.

#### Citizenship Amendment Act (CAA), 2019

- ❖ It seeks to **fast-track Indian citizenship to Hindus, Sikhs, Buddhists, Jains, Parsis and Christians** – with the exception of Muslims – who migrated to India owing to religious persecution in **Pakistan, Afghanistan and Bangladesh**.
- ❖ In essence, the 2019 amendment **relaxed the eligibility criteria** for certain classes of migrants (on religious lines) from **three neighbouring Muslim-majority countries**.
- ❖ **Exemption:** Certain categories of areas, including tribal areas in Assam, Meghalaya, Mizoram, and Tripura, and areas protected by the 'Inner Line' system, were exempted from the purview of the CAA.
  - ✓ The concept of Inner Line **separates the tribal-majority hills of the Northeast from the plains areas**. To enter and stay in these areas, an Inner Line Permit (ILP) is needed.

#### Issues/Challenges

- ❖ **The legal challenge:** The 2019 amendment was challenged before the Supreme Court in 2020 by the Indian Union Muslim League (IUML) and others, on the grounds of discrimination.
- ❖ **The right to equality:** The challenge to the CAA rests on the ground that it violates **Article 14** of the Constitution, which says that “the State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India”.
  - ✓ The petitioners’ argue that **using religion as a qualifier or a filter violates the fundamental right to equality**.
- ❖ **Targeted towards Muslims:** The petitioners have argued that the National Register of Citizens (NRC) in Assam to identify illegal immigrants, along with the CAA, will result in the targeting of Muslims.
- ❖ **Secularism:** There is also the larger issue of whether making religion a ground for eligibility for citizenship violates secularism, which is a basic feature of the Constitution.
- ❖ **Section 6A of The Citizenship Act, 1955 and Assam:** Section 6A was introduced in the Citizenship Act after the signing of the **Assam Accord** in 1985 which determines who is a foreigner in the state of Assam and sets **March 24, 1971 as a cut off date** which contradicts the cut off date given in the CAA 2019.
- ❖ **Widespread protests:** The protest in Assam and other northeastern states turned violent over fears that the move will cause a loss of their “political rights, culture and land rights” and motivate further migration from Bangladesh.



### Government's stand

- ❖ The government has said that Muslims have been excluded from the group of “persecuted” minorities because **Pakistan, Afghanistan, and Bangladesh are Islamic countries where Muslims are in majority.**
- ❖ However, it will be tested whether these three countries were picked essentially to keep Muslims out — this is because groups like **Tamil Hindus in Sri Lanka, the Rohingya in Myanmar, or minority Muslim sects like Ahmadiyyas and Hazaras** are also persecuted minorities in these countries.

### What lies ahead?

- ❖ The court will have to look into two issues:
  - ✓ Whether the **special treatment given to the so-called “persecuted minorities” from the three Muslim-majority neighbouring countries only is a reasonable classification** under Article 14 for granting citizenship, and
  - ✓ Whether the **state is discriminating against Muslims by excluding them.**
- ❖ The Supreme Court has earlier held that the law has to **clear two legal hoops to pass the equality test** when it is challenged on the grounds of Article 14.
  - ✓ First, any differentiation between groups of persons must be founded on an “intelligible differentia”, and
  - ✓ Second, “that differentia must have a rational nexus to the object sought to be achieved by the Act”.
- ❖ The **SC can strike down a classification if it is found to be arbitrary.** The court recently struck down the electoral bonds scheme on the ground that it was “manifestly arbitrary” — that is, “irrational, capricious or without an adequate determining principle”.

## INDIA'S DISABILITY LAW

**Context:** The **Central Public Works Department (CPWD)** recently asked its regional offices to ensure that “**all public buildings are accessible to people with disabilities**”.

### Persons with Disabilities (PWDs)

- ❖ As per **United Nations Conventions on the Rights of Persons with Disabilities** PWDs include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.
- ❖ As per National Family Health Survey, India's population of people with a disability has reduced to 1% between 2019 and 2021, from the 2.2% (26.8 million) estimated by the Indian census in 2011.
- ❖ As per **2011 population census**, 20% of persons with disabilities in India have a disability in movement, 19% have a disability in seeing, 19% have a disability in hearing and 8% have multiple disabilities.

### India's disability law: Rights of Persons with Disabilities Act 2016

- ❖ **The RPWD Act, 2016** provides that “the appropriate Government shall ensure that the PWD enjoys the right to equality, life with dignity, and respect for his or her own integrity equally with others.”
- ❖ The Act **replaces** the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.
- ❖ It **fulfills the obligations to the United National Convention on the Rights of Persons with Disabilities (UNCRPD)**, to which India is a signatory.
  - ✓ The convention was adopted by the UN General Assembly in December 2006, and entered into force in 2008. **India ratified the convention in 2007.**
- ❖ **Disability** has been defined based on an **evolving and dynamic concept.**
- ❖ **The types of disabilities covered are 21** and the **Central Government has the power** to add more types of disabilities.

- ❖ The Act provides for **penalties for offences** committed against persons with disabilities and also violation of the provisions of the new law.
- ❖ **Special Courts** will be designated in each district to handle cases concerning the violation of the rights of PwDs.

### Issues/ Challenges

- ❖ **Social Stigma:** The word disability is being seen as a social stigma, according to which parents feel ashamed of their children, and in fear most of them feel uncomfortable in public upfront.
- ❖ **Institutional Failures:** Indian education system and Government institutions both are failing in making arrangements for the welfare for disabled persons to an extent. There should be proper seats for disabled persons at classrooms as well as at the exam centres.
- ❖ **Illiteracy** is particularly prevalent among disabled people and constitutes a double disadvantage. In addition to being disabled, they are isolated by illiteracy.
- ❖ **Unemployment:** Disabled persons are the ones who are scapegoats in getting fired at tenure of recessions. They are first to be discharged from their services when cost cutting methods are adopted by the companies.
- ❖ **Poor implementation:** According to PwDs and activists, the 2016 guidelines were never implemented, and the 2021 guidelines are being treated similarly. No state has implemented the harmonized guidelines released in 2021, in their building by-laws.
- ❖ **Lack of awareness and accountability:** The implementation of accessibility standards has been haphazard. There is no consistency, there is a lack of budgetary allocation, and no monitoring and sensitisation.

### Measures needed

- ❖ **Change in approach from 'For' PWD to 'By' PWD:** "For" implies actions or initiatives done on behalf of persons with disabilities, while "by" signifies involvement and participation of persons with disabilities in the process.
- ❖ **Formulation of Comprehensive Inclusive Policies:** With focus on addressing unique challenges faced by individuals with disabilities that encompasses social, economic, and gender dimensions.
  - ✓ The inclusion of persons with disabilities into the economy can help **boost global GDP between 3% to 7%**, as per the study by the International Labour Organization (ILO).
- ❖ **Collaborative Process with PWDs and private sector:** Where persons with disabilities are not passive recipients but active contributors and the private sector as a key player in promoting employment opportunities for persons with disabilities.
  - ✓ **Opportunities Cafe in Kolkata** is run by 16 young adults who have intellectual disabilities, who are trained in hospitality by the cafe itself.
- ❖ **Attitudinal Shift and Social Justice:** The SPARK project by ILO with Women's Development Corporation in Maharashtra has contributed to an attitudinal shift towards PWDs by putting them in the lead and trained as **Disability Inclusion Facilitators (DIFs)**.
- ❖ **Education system:** There should be **reforms in Education system** to build a better society through which disabled persons can face the challenges of life with courage and conscience.
- ❖ **PWD-friendly infrastructure:** Universal accessibility should be incorporated in the site planning and detailed working drawings of public as well as private projects.
- ❖ **Job-oriented training:** Job-oriented training is the need of the time. There should be well trained professionals for training who can ignite the minds and train them to cater the needs of the service industry.
  - ✓ **Vocal and linguistic teachers** should be recruited for the overall well being of the people.

### Government Schemes and Initiatives

1. **The Harmonised Guidelines and Standards for Universal Accessibility in India, 2021:** These guidelines are an enabling step towards strengthening the national mandate of an Accessible India and a self-reliant India with a vision for a universally accessible and inclusive India.

2. **Department of Empowerment of Persons with Disabilities:** Understanding the special needs of Persons with Disabilities (PwDs), the government carved out a special department under the Ministry of Social Justice and Empowerment.
3. **'Divyang':** With a view to change the societal attitude towards PwDs and to encourage them to participate in the society without any feeling of inferiority, the Prime Minister coined the term 'divyang' to denote PwDs.
4. **Accessible India Campaign:** The campaign was launched in 2015 to create a barrier-free environment for divyangjan. The project envisages creation of ramps, help desks and accessible toilets in public places.
5. **Sugamya Bharat:** To understand the problems of divyangjan, the Government has launched the Sugamya Bharat app. The app lets people provide feedback on accessibility issues for PwDs.
6. **Unique Disability Identity Project (UDID):** The Project is aimed at easing disability certification, while weeding out fraud in the process.
7. **Divya Kala Shakti:** It is a scheme of the Government of India to encourage divyangjan to participate in cultural activities.
8. **Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP) Scheme:** Under this programme, the Government provides aids and assistive devices to PwDs.

### Conclusion

- ❖ PwDs constitute **one of the most vulnerable sections** of the country. They also can be a **source of untapped potential**, which, if harnessed well, may increase the economic growth and development in the country.
- ❖ The **need of the hour is proper sensitization of the community** towards the issues faced by PwDs, as well as to remove the social stigma attached to their integration into the society.

### 19TH FOUNDATION DAY OF NCPCR

**Context:** The National Commission for Protection of Child Rights (NCPCR) celebrated its 19th Foundation Day on 12th March, 2024.

#### About

- ❖ National Commission for Protection of Child Rights (NCPCR) was established in **2007** under the **Commission for Protection of Child Rights Act, 2005**.
- ❖ The commission's mandate is **to ensure that all laws, policies, programs and administrative systems** conform to the vision of the rights of the child as **enunciated in the Constitution of India as well as the United Nations Convention on the Rights of the Child**.
- ❖ A child is defined as a person falling in the **age group of 0 to 18 years**.
- ❖ **Functions of NCPCR:** NCPCR is constantly broadening the range of activities that can be undertaken such as developing new strategies for better monitoring, developing step-by-step processes to enable the authorities to carry out their duties.
  - ✓ It also includes preparing policy frameworks, using digital technology for improving the monitoring process, undertaking research studies, and first hand investigation on matters of serious nature.

#### What rights do Children Have?

- ❖ Child rights elaborate upon the do's and don'ts of dealing with children and matters related to them.
- ❖ These needs or requirements of children have been broadly divided into four areas or categories- **survival, development, protection and participation**.

#### Constitutional Rights of Children in India

- The Constitution of India guarantees all children certain rights these include:
  - ✓ Right to free and compulsory elementary education for all children in the 6-14 year age group (Article 21 A).
  - ✓ Right to be protected from any hazardous employment till the age of 14 years (Article 24).

- ✓ Right to be protected from being abused and forced by economic necessity to enter occupations unsuited to their age or strength (Article 39(e)).
- ✓ Right to equal opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and guaranteed protection of childhood and youth against exploitation and against moral and material abandonment (Article 39 (f)).

### India have following major Acts for children:

- ❖ Protection of Children from Sexual Offences Act, 2012
- ❖ Juvenile Justice (Care and Protection of Children) Act, 2015
- ❖ Rights of Children to Free and Compulsory Education (RTE) Act, 2009
- ❖ Child Labour (Prohibition and Regulation) Amendment Act, 2016
- ❖ Prohibition of Child Marriage Act, 2006
- ❖ Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act (PCPNDT) Act, 1994.

### KOVIND PANEL SUBMITTED REPORT ON SIMULTANEOUS ELECTION

**Context:** A committee led by former President Ram Nath Kovind submitted a report on the 'One Nation One Election' initiative to the President.

### Background

- ❖ **Simultaneous Elections** (One Nation One Election) refer to the idea of holding Lok Sabha and State legislative assembly elections together, with the aim of reducing the frequency of elections and their associated costs.
- ❖ Simultaneous elections in India to the Lok Sabha and State Legislative Assemblies were held in the years **1951-52, 1957, 1962 and 1967**.
- ❖ Thereafter, the schedule could not be maintained and the elections to the Lok Sabha and the State legislative assembly have still not been realigned.

### Suggestions of the Panel

- ❖ **Opting Step wise Process:** According to the panel, simultaneous polls to Lok Sabha and state assembly elections can be held in the 1st step, followed by local body (municipal and panchayat) polls within 100 days in the second step.
- ❖ **In case of hung House:** No-confidence motion, fresh elections could be held only for the remaining term of the immediately preceding full term of the House.
- ❖ **Constitution Amendments Needed:** The panel has recommended amendments to **Article 83** (duration of Houses of Parliament) and **Article 172** (duration of State legislatures) of the Constitution.
- ❖ This constitutional amendment **will not need ratification by the States**.
- ❖ **Ratification of states:** The panel also recommended amendments to Constitution which **requires ratification by the States;**
  - ✓ **Article 324A** of the Constitution to allow simultaneous elections in panchayats and municipalities; and
  - ✓ **Article 325** to allow the Election Commission of India (ECI), in consultation with State election authorities, to prepare a common electoral roll and voter ID cards.

### Arguments In Favour of One Nation One Election

- ❖ It will **reduce the huge expenditure** incurred for conducting separate elections every year.
- ❖ The problem of frequent elections leads to **imposition of MCC** over prolonged periods of time which affects the normal governance. Simultaneous elections can overcome such issues.
- ❖ Simultaneous elections will **free the crucial manpower** which is often deployed for prolonged periods on election duties.
- ❖ The **focus on governance** will increase, instead of being constantly in election mode.

### Arguments Against One Nation One Election

- ❖ All states and the central government face massive **logistical challenges** including coordinating the schedules, resources etc.
- ❖ It may **help the dominant national party** or the incumbent at the Centre at the cost of regional parties and regions issues can be overshadowed by the national issues.

### Way Ahead

- ❖ Synchronized polls for all 3 tiers of government will improve governance architecture. It will enhance “transparency, inclusivity, ease and confidence of voters.
- ❖ The **22nd Law Commission**, examining the simultaneous polls issue, is expected to recommend simultaneous polls from the 2029 general election cycle.

## LEVELS AND TRENDS IN CHILD MORTALITY: UN REPORT

### Context:

- ❖ **Global child deaths reached a historic low in 2022**, according to the latest estimates by the **United Nations Inter-agency Group for Child Mortality Estimation**.

### About

- ❖ The report noted the **annual number of global under-five deaths in 2022 declined by more than half** from the 2000 estimate — from 9.9 million to 4.9 million.
- ❖ However, the numbers are still bad. Globally,
  - ✓ **neonatal deaths**, or the death of a baby within 28 days of birth, happened every 14 seconds;
  - ✓ **a child aged under five** died every six seconds and
  - ✓ **an adolescent (ages 10 to 19)** died every 35 seconds in 2022, the report found.

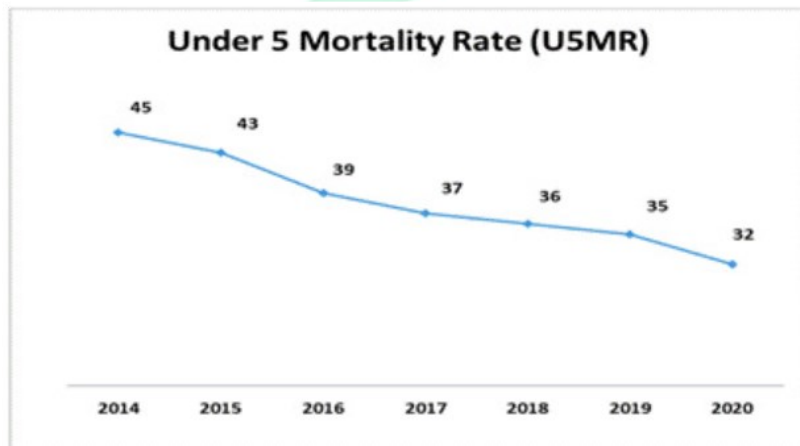
### Major Highlights of the Report

- ❖ **Decline in child deaths:** The report noted a **62 per cent decline in child deaths** from the 1990 estimates.
  - ✓ However, it warned that “these averages mask **persistent and entrenched inequities among vulnerable populations** of children.”
- ❖ **Neonatal deaths:** While the larger trend shows a decline, **the trend of under-five deaths has increased in the neonatal period** from 41 per cent in 2000 to 47 per cent in 2022.
  - ✓ The slower decline in neonatal deaths is due to **factors like population change and differences in the cause-of-death structure by age**.
    - Mortality among 1–59-month-olds is generally more responsive to **basic public health interventions**, while neonatal mortality relates more to **complications around the time of birth**.
- ❖ **Sub-saharan Africa:** Sub-Saharan Africa, where annual neonatal deaths have stagnated at about 1 million, bears the greatest burden of under-five deaths in the world.
  - ✓ The mortality rate for children aged 28 days was **46 deaths per 1,000 children** in the region, more than two times higher than the **global average of 20 deaths per 1,000 children** aged 28 days.
- ❖ **Leading causes:** Prematurity, pneumonia, trauma, malaria and diarrhoea are among the leading causes of death for newborns and children, all preventable causes.
  - ✓ **These illnesses could have been prevented** with vaccinations, availability of skilled health personnel at birth, support for early and continued breastfeeding.
- ❖ **Survival factors:** The child’s survival largely depends on the place of birth; whether the child belongs to a low-income or high-income country, and also on the inequity within countries.
  - ✓ On average, **children living in rural areas are at a higher risk** of death before age 5 compared to their urban counterparts.
- ❖ **Predictions:** The report estimates that **35 million children** under the age of 5 will lose their life before 2030 and sub-Saharan Africa will bear most of the death toll.

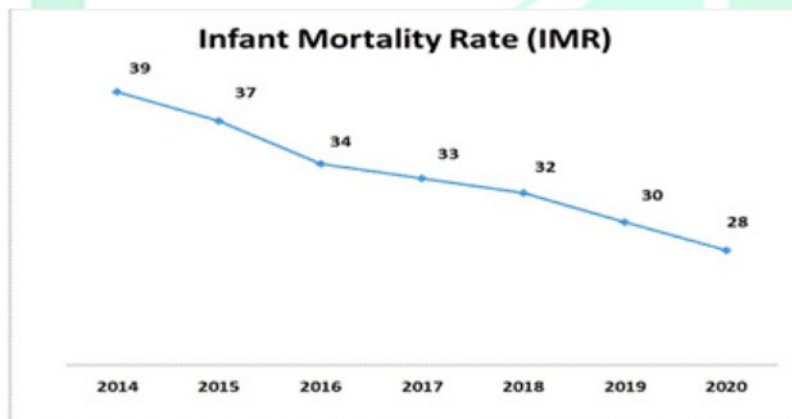
- ✓ It further warned that under current trends, **59 countries will miss the SDG under-five mortality target and 64 countries will miss the neonatal mortality target.**

### Child Mortality in India: Status and Trends

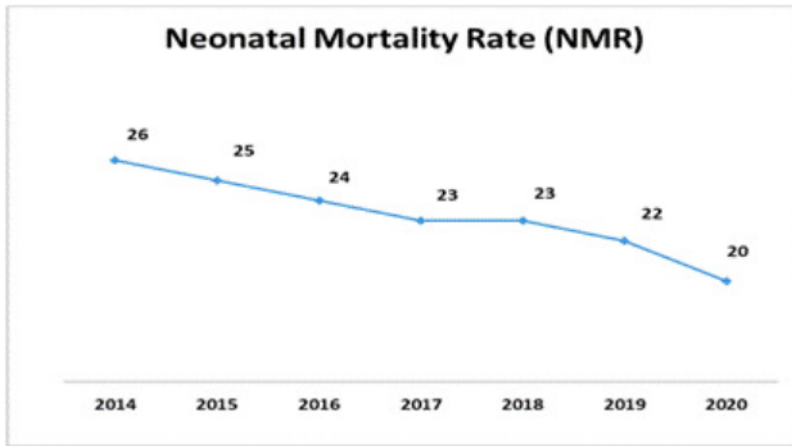
- ❖ As per the **Sample Registration System (SRS) Statistical Report 2020 released on 22nd September 2022** by Registrar General of India (RGI), the country has been witnessing a **progressive reduction in IMR, U5MR and NMR since 2014** towards achieving the Sustainable Development Goals (SDG) targets by 2030.
- ❖ **Under 5 Mortality Rate (U5MR)** for the country has shown a significant decline of 3 points from 2019 (32 per 1000 live births in 2020 against 35 per 1000 live births in 2019).
  - It varies from 36 in rural areas to 21 in urban areas and U5MR for females is higher (33) than male (31).



- ❖ **Infant Mortality Rate (IMR)** has also registered a 2-point decline to 28 per 1000 live births in 2020 from 30 per 1000 live births in 2019 (Annual Decline Rate: 6.7%).
  - ✓ The Rural-Urban difference has narrowed to 12 points (Urban 19, Rural-31).



- ❖ **Neonatal Mortality Rate** has also declined by 2 points from 22 per 1000 live births in 2019 to 20 per 1000 live births in 2020 (Annual Decline Rate: 9.1%).
  - It ranges from 12 in urban areas to 23 in rural areas.



### Major Causes of Child Mortality in India

- ❖ **Preterm Birth Complications:** Low birth weight, respiratory problems due to underdeveloped lungs.
- ❖ **Birth Asphyxia:** Lack of oxygen during delivery, leading to brain damage or death.
- ❖ **Neonatal Infections:** Sepsis, pneumonia can overwhelm a newborn's weak immune system.
- ❖ **Pneumonia:** The leading cause, often linked to malnutrition and air pollution.
- ❖ **Diarrhoea:** Dehydration caused by infectious diseases like rotavirus.
- ❖ **Malnutrition:** Stunting and wasting weaken a child's immune system and increase vulnerability to infections.

### Measures to Reduce Child Mortality

#### Improving Maternal Health

- ❖ **Prenatal Care:** Regular checkups, proper nutrition for pregnant women to prevent complications and low birth weight.
- ❖ **Skilled Birth Attendance:** Deliveries by trained midwives or doctors to ensure safe childbirth.
- ❖ **Postnatal Care:** Monitoring the well-being of mothers and newborns after delivery.

#### Combating Childhood Illnesses

- ❖ **Immunization Programs:** Ensure universal access to vaccinations for preventable diseases like measles, pneumonia, and diarrhea.
- ❖ **Improved Sanitation and Hygiene:** Promote handwashing with soap, access to clean drinking water, and proper sanitation facilities.
- ❖ **Pneumonia Control:** Early diagnosis and treatment with antibiotics.
- ❖ **Diarrhoea Management:** Oral rehydration therapy (ORT) with clean water and electrolytes to prevent dehydration.

#### Addressing Malnutrition

- ❖ **Nutritional Programs:** Promote breastfeeding for newborns, provide access to nutritious food for mothers and children, especially during the crucial first 1000 days of life.

#### Public Awareness

- ❖ **Educate families:** Importance of good hygiene, breastfeeding, timely medical care for children, and recognizing danger signs of illness.

#### Additional Measures

- ❖ **Invest in Healthcare Infrastructure:** Equip health facilities, especially in rural areas, with necessary supplies and train healthcare workers.
- ❖ **Address Social Determinants:** Poverty, lack of education, and gender inequality significantly contribute to child mortality.
- ❖ **Empowering Women:** Education and economic empowerment of women lead to better health outcomes for themselves and their children.

#### Way Ahead

**By tackling causes behind the child mortality and implementing required measures**, India can significantly reduce child mortality and ensure a healthier future for its young generation.

## PERSISTENT FEDERAL FRICTIONS

**Context:** In recent years, the frequency and intensity of disputes between the Union government and the States have increased.

### Federalism in India

#### ❖ **Meaning:**

- ✓ Federalism refers to a vertical division of power in a political system. It is a system in which power is divided between a central authority and other constituents.
- ✓ For e.g. in India, political power is divided between the Central government, state governments and the institutions of local governance.

#### ❖ **Features of a federal system:**

- ✓ **Multiple levels of government:** Federalism, by its very definition, requires multiple levels of government functioning within their defined territory.
- ✓ **Division of Power:** The power is divided by the division of subjects between the entities so that the chances of conflict are reduced to a minimum.
- ✓ **Written Constitution:** It ensures there is clarity in the respective division of power. Again, a rigid constitution ensures that this division of power is not easily disturbed.
- ✓ **Independent Judiciary:** It acts as a dispute resolution mechanism between the different levels of government.

#### ❖ **Interdependence of state and Central Government:**

- ✓ India consciously adopted a version of federalism that made the Union government and State governments interdependent on each other (latter more vis-a-vis the former).
- ✓ Thereby violating the primal characteristic of a federal constitution i.e., autonomous spheres of authority for Union and State governments.

#### ❖ **'Holding together' Federalism:**

- ✓ India's centralised federal structure was not marked by the process of 'coming together' but was an outcome of 'holding together' and 'putting together'.

#### ❖ **Indestructible & Flexibility:**

- ✓ B. R. Ambedkar called India's federation a Union as it was indestructible which is why the Constitution does not contain words related to federalism.
- ✓ He also said that India's Constitution holds requisite flexibility to be federal and unitary on a need basis.

### Types of Federalism

#### ❖ **Cooperative Federalism:**

- ✓ It refers to the horizontal relationship between the entities in a federal structure.
- ✓ Cooperative federalism refers to the cooperation between the two entities in pursuit of unified socio-economic development of the country.

#### ❖ **Competitive Federalism:**

- ✓ It refers to promoting healthy competition between the states to keep them motivated in pursuit of economic development.
- ✓ The laggard states are expected to put in extra efforts to catch-up with the front-runners, while the front-runners are expected to work hard to retain their ranking in the indices.

#### ❖ **Fiscal Federalism:**



- ✓ It deals with the division of financial powers as well as the functions between multiple levels of the federal government.
- ✓ It has within its ambit the **imposition of taxes** as well as the **division of different taxes** between the Centre and the constituent units.
- ✓ Similarly, in the case of joint **collection of taxes**, an objective criterion is determined for the **fair division of funds** between the entities.
- ✓ Usually, there is a constitutional authority (like **Finance Commission** in India) for the purpose **to ensure fairness** in the division.

### About the increasing federal frictions

#### ❖ Dependence over public expenditure:

- ✓ Continuing economic reforms since 1991 has **led to the relaxation** of many controls on investments, giving some room to States.
- ✓ But the autonomy **regarding public expenditure policies** is **not absolute** as State governments depend on the Centre for their revenue receipts.
- ✓ This equation between the Centre and the States has given way to friction between them in recent days, leaving little room to negotiate.

#### ❖ Others: Apart from issues around resource sharing, there are other areas that have emerged as sites of conflict. **These include:**

- ✓ The homogenisation of social sector policies,
- ✓ Functioning of regulatory institutions and
- ✓ The powers of central agencies.

#### ❖ Increasing influence of centre:

- ✓ Ideally bulk of the policies in these spheres should be at the discretion of States, with an apex central body overseeing the process of resource allocation.
- ✓ However, the apex bodies have often attempted to increase their influence and push States in directions that are amenable to the Centre.

### Economic consequences of the federal frictions

#### ❖ Dilemma of investments:

- ✓ The spread of the Centre's span of activities leads to a situation where the **Centre starts crowding out the States** in terms of **investments**.
- ✓ Consider a case of infrastructure development in recent years.
  - The Centre launched the PM Gati Shakti, a digital platform, to incorporate schemes of various Ministries and State governments to achieve **integrated planning and coordinated implementation** of infrastructure connectivity projects.
  - All States and UTs had to prepare and operationalise a state master plan in line with the national master plan for seamless implementation.
- ✓ However, **the flexibility of States in formulating their master plan** is **curtailed** by the centralisation of planning and implementation of the national master plan.
  - This leads to **underinvestment by States**.

#### ❖ Concentrated spending:

- ✓ The centre's spending has become more concentrated within the three largest States of **Uttar Pradesh, Maharashtra and Gujarat**, accounting for **nearly half of the expenditure** by 16 States between 2021-22 and 2023-24.
- ✓ **Data for 25 States** shows that a total of ₹7.49 lakh crore was budgeted for by these States but they spent only ₹5.71 lakh crore which is 76.2% of the total.

- Investment by these States is important in terms of their impact on regional economies as they induce more local level linkages while national infrastructure projects forge more linkages with the global economy.

❖ **Little competition:**

- ✓ In a scenario of friction with the Centre, State governments will engage in competition with other States and with the Centre. Welfare provisioning is one such area.
- ✓ The Centre with enhanced fiscal space has more spending power, while States' revenues, especially non-tax revenues, remain flat as possibilities of raising non-taxes are confined to a smaller sphere due to the direct provisioning of many utilities and services by the Centre.

❖ **Inefficiencies associated with 'parallel policies':**

- ✓ Federal abrasions lead to either the Centre or the States duplicating the other's policies.
- ✓ The emergence of parallel schemes is mainly due to the trust deficit prevailing in the federal system, the fiscal costs of which have long run consequences on the economy.

**Way ahead**

- ❖ For securing the implementation of many of its laws and policies, the Centre depends on the States, particularly in the concurrent spheres.
- ❖ The States also entrust their executive functions, with the consent of the Centre, to the government or agencies of the Centre (Article 258A).

Such interdependence is inevitable, especially in a large, diverse, developing society and needs to be preserved.

## **SOCIAL PROTECTION ARCHITECTURE IN INDIA**

**Context:** According to the ILO's World Social Protection Report, 2022, India spends too little on social protection.

- ❖ Social security is a human right, according to the United Nations Declaration of Human Rights. The ILO's Recommendation of 2012 has called for all nations to institute a "social protection floor".

**Social Security**

- ❖ It is the protection that a society provides to individuals and households to ensure access to **health care** and to **guarantee income security, particularly in cases of old age, unemployment, sickness, invalidity, work injury, maternity or loss of a breadwinner.**
- ❖ Social security is a human right, according to the United Nations Declaration of Human Rights.
- ❖ The ILO's Recommendation of 2012 has called for all nations to institute a "social protection floor".

**Importance**

- ❖ Social security has a powerful impact at all levels of society.
- ❖ It provides workers and their families with **access to health care** and with **protection against loss of income**, whether it is for short periods of unemployment or sickness or maternity or for a longer time due to invalidity or employment injury.
- ❖ It provides older people with **income security** in their retirement years.
- ❖ **Children** benefit from social security programmes designed to help their families cope with the **cost of education.**
- ❖ For employers and enterprises, social security helps **maintain stable labour relations** and a productive workforce.
- ❖ Social security can contribute to **social cohesion and to a country's overall growth and development** by bolstering living standards, cushioning the effects of structural and technological change on people and thereby providing the basis for a more positive approach toward globalisation.

## Social Security Welfare Schemes

- ❖ **Pradhan Mantri Shram Yogi Maan-Dhan Yojana (PM-SYM) (Old Age Protection)** : Voluntary and contributory pension schemes
  - ✓ Under this schemes, 50% monthly contribution is payable by the beneficiary and equal matching contribution is paid by the Central Government
- ❖ **Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)**: Those living in scheduled caste and scheduled tribe households.
  - ✓ Families with no male members aged 16 to 59 years.
  - ✓ Beggars and those surviving on alms
  - ✓ Health coverage of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization free of cost.
- ❖ **Pradhan Mantri Awaas Yojana – Gramin (PMAY-G)**: the Ministry of Rural Development is implementing PMAY-G with effect from 1st April 2016 to provide assistance to eligible rural households with an overall target to construct 2.95 crore pucca houses with basic amenities by March, 2024.
  - ✓ Assistance provided to the Beneficiary to the tune of 1.2 Lakhs in plain areas and 1.3 Lakhs in Hilly Areas.
- ❖ **PDS**: 35 kg of rice or wheat every month, while a household above the poverty line is entitled to 15 kg of food grain on a monthly basis.
  - ✓ Being implemented as ONORC to enable migrant workers to receive the food grains wherever they are working.
- ❖ **Atal Pension Yojana** : The contributor on his choice, can attain a pension of 1000-5000 rupees, or he can also get an accumulated sum of the pension after his death.
- ❖ **Pradhan Mantri Suraksha Bima Yojana (PMSBY)** : The risk coverage under the scheme is Rs. 2 lakh for accidental death and full disability and Rs. 1 lakh for partial disability. Premium @ 20/- year
- ❖ **Pradhan Mantri Jeevan Jyoti Yojana (PMJJBY)** : Rs.2 lakh on death due to any cause Premium @ Rs.436/- year
- ❖ Women have come to occupy centrestage in the emerging social protection architecture.
  - ✓ Schemes covering education expenses, free public transport, subsidised LPG, and cash transfers have been floated.
  - ✓ The Centre made a beginning by launching the **Ujjwala scheme** in 2016, providing subsidised LPG gas cylinders to poor women.
- ❖ **Mahatma Gandhi NREGA**: Government of India has allocated Rs.60, 000 crore in Budget Estimate 2023-24 under Mahatma Gandhi NREGA.
  - ✓ Recently the Government notified new wage rates for unskilled manual workers under MGNREGA for the financial year 2024-2025, with Goa seeing the maximum hike of 10.56% over the current wage rate, and Uttar Pradesh and Uttarakhand recording the lowest raise of 3.04% each.

## Issues and Concerns

- ❖ According to the ILO's World Social Protection Report, 2022, India spends too little on social protection.
- ❖ India's policymakers have largely ignored social security. While policies are often announced, **budgetary allocation** has **always been limited and utilisation** even less so.
- ❖ Approximately 91% (or around 475 million) of India's workforce works in the informal sector.
  - ✓ It lacks access to social security.
- ❖ In two decades, India will be an ageing society — for such workers with limited savings, there will be no significant social protection.

- ❖ While the **Code on Social Security (2020)** merged existing social security legislation, it dealt fundamentally with formal enterprises and did not cover informal ones.
  - ✓ It remains unimplemented even today.
- ❖ The **existing social security framework for unorganised** workers has become complex, with **overlapping areas of authority between the State and Centre**, and confusing definitions being used such as between a platform worker, an unorganised worker and someone who is self-employed.
- ❖ The lockdown to slow the spread of the coronavirus disease (Covid-19) has inflicted a heavy cost on India's poor.

### **Suggestions and Way Forward**

- ❖ India should aspire to **provide social security** to all of its workforce, in a manner that is **fiscally and administratively feasible**.
- ❖ Greater support is required for **financing social security** for the majority of India's labour force, moving beyond construction and gig workers.
- ❖ **Special attention** is required for domestic workers (usually female), who are never sure when their employment may be terminated.
- ❖ Migrant workers often face discrimination and suspicion from authorities in their working area so coverage of social services such as child care can be expanded.
- ❖ We need a more significant push to **raise awareness about social security** to ensure that more workers are aware of the available benefits.
- ❖ The time has come for India to consolidate its existing social security schemes/ad hoc measures and provide universal social security to its entire labour workforce.

CivilsTap Hlmachal

## INTERNATIONAL

### INDIA – MAURITIUS RELATIONS

**Context:** Recently, the Prime Minister of India and Mauritius jointly inaugurated **an airstrip, jetty, and 6 other projects** to ensure maritime security and connectivity to **Mauritius’ Agalega islands**.

#### Current Development

- ❖ **Background:** India and Mauritius signed MoU in 2015 to upgrade the airstrip and the Set James Jetty in the island country.
- ❖ The **Agalega island of Mauritius** is seen as important as they are expected to **boost connectivity** as well as maritime security and surveillance of **Mauritius’ vast EEZ of 2.3 million square kilometres** in the **strategic Indian Ocean region**.  
A. It helps in ‘*emergency responses, including search and rescue, marine pollution and humanitarian assistance*’.  
– It checks counter-piracy, counter-terrorism, counter-narcotics actions, combat human trafficking, combat illegal, unreported and unregulated fishing.

#### About the India and Mauritius Relations

- ❖ India and Mauritius share a deep and historical bond, with Indian origin people comprising nearly 70% of the island’s population.
- ❖ The relationship between the two nations is rooted in shared history, culture, and democratic values.

#### Historical Ties:

- ❖ The first Indians were brought to Mauritius from the Puducherry region in 1729 to work as artisans and masons.
- ❖ Under British rule, about half a million Indian indentured workers were brought to Mauritius between 1834 and the early 1900s.
- ❖ About two-thirds of these workers permanently settled down in Mauritius.

#### Diplomatic Relations:

- ❖ India established diplomatic relations with Mauritius in 1948, even before the independence of Mauritius.
- ❖ India was represented by an Indian Commissioner in British-ruled Mauritius between 1948 and 1968 and thereafter, by a High Commissioner after Mauritius became independent in 1968.

#### Economic Cooperation:

- ❖ India and Mauritius signed a **Comprehensive Economic Cooperation and Partnership Agreement (CECPA)** in 2021.
  - ✓ Under the CECPA, India and Mauritius would provide preferential access to a number of items like surgical equipment, medicine, and textile products that would cater to market requirements on both sides.
- ❖ **Bilateral trade** has been **disproportionately in favour of India**. (For the FY 2022-2023, Indian exports to Mauritius was USD 462.69 mn, Mauritian exports to India was USD 91.50 mn and Total trade was USD 554.19 mn).
  - ✓ It has grown by 132% in the last 17 years, from USD 206.76 million in 2005-06 to USD 554.19 million in 2022-23.
- ❖ **FDI:** Cumulative FDI worth USD 161 billion came from Mauritius to India in the two decades from 2000 – 2022 (26% of total FDI inflows into India).

- ✓ FDI inflows from Mauritius have dropped from USD 15.72 bn in 2016-17 to USD 6.13 bn in 2022-23, with Mauritius becoming India's third largest source of FDI.

❖ **Indian Public Sector Undertakings (PSUs) in Mauritius:** At present, 11 Indian PSUs are in Mauritius which include Life Insurance Corporation, Indian Oil (Mauritius) Limited, State Bank of India (Mauritius), Rail India Technical and Economic Service (RITES) etc.

#### **Defence Cooperation:**

- ❖ India is the preferred defence partner of Mauritius for acquiring platforms/equipment, capacity building, joint patrolling, hydrological services, etc.
- ❖ Indian defence officers are deputed to the Mauritian Defence Forces. An Indian Navy officer heads the Mauritian National Coast Guard; an Indian Air Force officer commands the Police Helicopter Squadron and an Indian Naval Officer heads the Mauritius Hydrography Services.
- ❖ In February 2021, India extended a **Line of Credit** of USD 100 mn to Mauritius for procuring defence products, under which Mauritius has already sourced a **Passenger Variant Dornier aircraft** and an **Advanced Light Helicopter Dhruv**.
- ❖ **SAGAR:** India recalled that it was in Mauritius, during 2015 that India's maritime cooperation vision of SAGAR – '**Security and Growth for All in the Region**' was outlined.

#### **Others:**

- ❖ India has traditionally been the '**first responder**' for Mauritius in times of crisis, including during the recent Covid-19 and **Wakashio oil-spill crisis**.
- ❖ **Mauritius** has become the **first country to join India's Jan Aushadhi initiative** which will benefit the people of Mauritius by providing better quality Made-in-India generic medicines.
- ❖ **RuPay cards and UPI connectivity** between two countries were established.

#### **Associated Challenges and Concerns**

- ❖ **Tax Treaty Misuse:** The Double Taxation Avoidance Agreement (DTAA) between India and Mauritius had been a point of concern due to its potential misuse for illicit activities like money laundering and round-tripping of funds.
  - ✓ It led to amendments in the treaty in 2016 and the implementation of the General Anti-Avoidance Rule (GAAR) in 2017.
- ❖ **Chagos Archipelago Dispute:** It is an issue of sovereignty and sustainable development before the United Nations.
  - ✓ In 2019, India voted at the U.N. General Assembly in support of the Mauritian position on the issue.
- ❖ **Security Concerns:** With Mauritius emerging as an important maritime entity in the Indo-Pacific region, security concerns are paramount.
  - ✓ India and Mauritius have a strong defence partnership, but maintaining and enhancing this partnership in the face of evolving regional dynamics can be challenging.
- ❖ **Logistical and Bureaucratic:** While India and Mauritius have a robust development partnership, the ongoing implementation of various infrastructure projects and the delivery of promised assistance can pose logistical and bureaucratic challenges.

#### **Conclusion**

- ❖ The relationship between India and Mauritius is multifaceted and has grown stronger over the years. The two nations continue to work together in various fields, including infrastructure, FinTech, culture, and more.
- ❖ The special ties between India and Mauritius are a testament to their shared history, cultural affinities, and mutual respect.

## PANCHESHWAR MULTIPURPOSE PROJECT (PMP)

**Context:** Despite the recently held high meeting between India and Nepal, the consensus over sharing benefits of the **Pancheshwar project** is not resolved.

### About Pancheshwar Project

- ❖ PMP is a **bi-national hydropower project** to be developed in **Mahakali River** bordering Nepal and India.
- ❖ Development of PMP, is a mutual interest project between two countries, and is covered under integrated **Mahakali Treaty** signed between Nepal and India in 1996.
- ❖ The project is aimed at generating around 6,480 MW energy (to be divided equally between two sides), along with water for irrigation of 130,000 hectares of land in Nepal and 240,000 hectares of Indian territory, respectively.

### Areas of Differences

- ❖ While electricity is divided equally, India gets the lion's share of irrigation and flood control benefits.
- ❖ On the other hand, Nepal feels water is 'white gold' and India should pay Nepal for it.
- ❖ India cannot accept this claim as it challenges India's understanding of other water-based treaties, including the Indus Waters Treaty with Pakistan.

### Overview of India – Nepal Relations

- ❖ **Shared Border:** The country shares a border of over **1,850 km with five Indian states – Sikkim, West Bengal, Bihar, Uttar Pradesh and Uttarakhand.**
  - ✓ Land-locked Nepal relies heavily on India for the transportation of goods and services and access to the sea is through India.
- ❖ **The India-Nepal Treaty of Peace and Friendship:** Signed in 1950, it forms the **bedrock of the special relations that exist between India and Nepal.**
  - ✓ Nepalese citizens **avail facilities and opportunities on par with Indian citizens** in accordance with the provisions of the Treaty.
- ❖ **Defence Cooperation:** India has been assisting the Nepal Army (NA) in its **modernisation by supplying equipment and providing training.**
  - ✓ Both countries conduct **Joint Military Exercise SURYA KIRAN'** alternately in India and in Nepal.
  - ✓ Since 1950, India and Nepal have been awarding each other's Army Chief with the **honorary rank of General.**
  - ✓ **The Gorkha regiments** of the Indian Army are raised partly by recruitment from **hill districts of Nepal.**
- ❖ **Connectivity and Development Partnership:** India has been assisting Nepal in development of border infrastructure through **upgradation of 10 roads in the Terai area;** development of cross-border rail links and establishment of **Integrated Check Posts.**
- ❖ **Water Resources Cooperation:** Cooperation in water resources from the **common rivers** is among the important areas of bilateral relations.
  - ✓ **A three-tier bilateral mechanism established in 2008,** to discuss issues relating to cooperation in water resources has been working well.
- ❖ **Energy Cooperation:** India and Nepal have had a **Power Exchange Agreement since 1971** for meeting the power requirements in the border.
  - ✓ India is currently supplying a total of about **600 MW of power to Nepal.**
- ❖ **Trade and Economic:** India remains **Nepal's largest trade partner,** Nepal is India's 11th largest export destination.
  - ✓ In FY 2021-22, it constituted 2.34% of India's exports. Infact exports from India constitute almost 22% of Nepal's GDP.

- ❖ **Mahakali River bridge:** A MoU was signed between India and Nepal for the **construction of a motorable bridge** across the Mahakali River connecting Dharchula (India) with Darchula (Nepal), under Indian grant assistance.
- ❖ **Operation Maitri & post-earthquake reconstruction assistance:** In the wake of the 2015 earthquake in Nepal, GoI was the first responder and carried out its **largest disaster relief operation abroad (Operation Maitri)**.
- ❖ **Cultural Ties:** The leaders of the two countries have often noted the **age-old 'roti beti' relationship**, which refers to **cross-border marriages** between people of the two countries.

### Issues between India & Nepal

- ❖ **Treaty of Peace and Friendship of 1950:** It was an effort to **“strengthen and develop these ties and to perpetuate peace between the two countries”**.
  - ✓ As time passed, Nepal believed the treaty was **“incompatible with national self-respect”**.
- ❖ **Kalapani dispute:** The area is in India's control but Nepal claims the region because of **historical and cartographic reasons**. The area is the largest territorial dispute between Nepal and India consisting of at least 37,000 hectares of land in the High Himalayas.
- ❖ **Susta Border dispute:** Susta is a disputed territory between Nepal and India. It is administered by India as part of West Champaran district of Bihar.
  - ✓ Nepal claims the area a part of West Nawalparasi District under Susta rural municipality, alleging that over 14,860 hectares of Nepali land in Susta has been encroached upon by India.
- ❖ **Political Interference:** Nepal has at times accused India of interference in its internal political affairs, particularly during periods of political instability or transition.
  - ✓ **Security Concerns:** Both India and Nepal have shared security concerns, including issues related to cross-border terrorism, trafficking, and border security.
- ❖ **Perception of Unequal Relationship:** Some segments of Nepalese society have expressed concerns about what they perceive as an unequal relationship with India, with allegations of economic dependence and a lack of reciprocity in the bilateral relationship.

### Way ahead

- ❖ The discussion to kickstart the Pancheshwar project will require political consensus and bureaucratic foresight on both sides, which is yet to emerge.
- ❖ Despite these challenges and disputes, India and Nepal have historically maintained close ties and continue to engage in dialogue and diplomatic efforts to address bilateral issues.
- ❖ Both countries recognize the importance of their relationship and are committed to finding mutually acceptable solutions to their differences while promoting cooperation and friendship for the mutual benefit of their peoples.

### G4 MODEL FOR UNSC REFORMS

**Context:** India has presented a **detailed model** on **behalf of the G4 nations** for Security Council reform.

#### About the G4 Model

- ❖ India presented the 'G4 model' on behalf of **Brazil, Germany, Japan and India** for debate, dialogue and finally negotiations.
  - ✓ The proposals elicited strong support from wider UN members.
- ❖ **New Members:** It proposes that the Security Council's membership increase from the current **15 to 25-26**, by adding **six permanent** and **four or five non-permanent members**.
- ❖ **Regional Representation:** Among the six new permanent members, **two** each are proposed to be from **African states and Asia Pacific states**, **one from Latin American and Caribbean states**; and **one from Western European and Other states**.



- ❖ **Flexibility in Veto:** The G4 model offered **flexibility on the veto**, while the new permanent members would, as a principle, have the same responsibilities and obligations as current permanent members, they **shall not exercise the veto until** a decision on the matter has been taken during a review.
- ❖ **Permanent Members are not Specified:** G4 model does not specify which member states will occupy the new permanent seats.
  - ✓ This decision will be made by the General Assembly in a democratic and inclusive election.

### About the UNSC

- ❖ The United Nations Security Council (UNSC) is **one of the principal organs** of the United Nations, responsible for **maintaining international peace and security**.
- ❖ It was established in **1945** as part of the UN Charter and is composed of **15 member states**, including **five permanent members** with veto power—China, France, Russia, the United Kingdom, and the United States—and **ten non-permanent members** elected for **two-year terms** by the General Assembly.
- ❖ It is headquartered in New York City.

### Need for the Reforms in the UNSC

- ❖ **Current Composition:** The current composition of the Security Council has **under-representation and un-representation of key regions**.
- ❖ **Inability to Address Conflicts:** The current composition of the council has an **inability to address critical conflicts** and maintain international peace and security.
- ❖ **Changes in World Order:** The world has undergone **a sea change since 1945** and the **new** realities need to be reflected in the permanent membership.
  - ✓ Any proposal that does not address the issue of representation of the Global South, including Africa, Asia and Latin America, in the permanent category does a grave **injustice to the aspirations of developing countries for equality**.
- ❖ **Veto Power:** Currently, **only the five permanent members** hold veto powers and through its use have stalled action in the Council to address global challenges and conflicts such as in Ukraine and Gaza.
  - ✓ The remaining 10 nations in the Council are elected to sit as non-permanent members for two-year terms and **do not have veto powers**.
- ❖ **Legitimacy:** The disproportionate power held by the five permanent members, particularly their veto power, can **lead to a perception of unfairness and lack of legitimacy**.

### Limitations in Introducing the Reforms in UNSC

- ❖ **Veto Power of Permanent Members:** Any reforms to the composition or working methods of the UNSC require the approval of the five permanent members.
  - ✓ These countries have divergent interests and are reluctant to support changes that could diminish their influence within the Council.
- ❖ **Regional Dynamics:** Regional rivalries and geopolitical tensions complicate efforts to reform the Council.
- ❖ **Complexity of the Reform Process:** Amending the UN Charter to enact reforms requires a lengthy and complex process involving ratification by a significant number of member states, making it difficult to enact substantive reforms.
- ❖ **Chinese Opposition:** China being a permanent member blocks the growth of India becoming a Permanent Member.

### Way Ahead

- ❖ It is important that both the **permanent and non-permanent membership** be representative of the world as it is today, not the world as it existed in the wake of the Second World War.
- ❖ Reforms in the UNSC are essential for maintaining its relevance, legitimacy, and effectiveness in addressing the complex security challenges facing the international community in the 21st century.
- ❖ However, achieving consensus on such reforms among the UN's member states remains a challenging and ongoing process.

## MOU BETWEEN INDIA AND BHUTAN

**Context:** The Union Cabinet recently gave its approval for the signing of **Memorandum of Understanding between the Government of India and the Royal Government of Bhutan.**

### About

- ❖ The MoU signed between the two countries is on **General Supply of Petroleum, Oil, Lubricants (POL) and related products from India to Bhutan.**
- ❖ It aims to **benefit India and its citizens with improved economic and commercial linkages with Bhutan** irrespective of any gender, class or income bias, particularly in the area of hydrocarbon sector.

### Expected Benefits of MoU

- ❖ The Memorandum of Understanding will **promote bilateral trade** in the hydrocarbon sector and will ensure secured and long term supply of petroleum products to Bhutan.
- ❖ Since, exports play a crucial role in realizing Aatmanirbhar Bharat. The MoU will give **thrust towards self-reliant India.**
- ❖ The MoU will be a **strategic fit as Energy Bridge** in India's **Neighborhood First Policy.**

### India-Bhutan Relations: An Overview

- ❖ **Diplomatic relations between India and Bhutan were established in 1968** with the establishment of a special office of India in Thimphu.
  - ✓ Before this our relations with Bhutan were looked after by our **Political Officer in Sikkim.**
- ❖ The basic framework of India- Bhutan bilateral relations was the **Treaty of Friendship and Cooperation signed in 1949** between the two countries, which was **revised in February 2007.**
- ❖ The India-Bhutan Friendship Treaty not only reflects the **contemporary nature of our relationship but also lays the foundation for their future development** in the 21st century.

### Major Areas of Cooperation

#### Hydropower Cooperation

- ❖ Hydropower projects in Bhutan are an example of **win-win cooperation**, providing a reliable source of inexpensive and clean electricity to India, generating export revenue for Bhutan and cementing our economic integration.
- ❖ The ongoing cooperation between India and Bhutan in the Hydropower sector is covered under the **2006 Agreement on Cooperation in Hydropower and the Protocol** to the 2006 agreement signed in March, 2009.
- ❖ So far, the Government of India has constructed **three Hydroelectric Projects (HEPs) in Bhutan** totaling 1416 MW (336 MW Chukha HEP, 60 MW Kurichhu HEP and 1020 MW Tala HEP), which are operational and exporting surplus power to India.
  - ✓ About **three-fourth of the power generated is exported** and the rest is used for domestic consumption.

#### Bilateral Trade

- ❖ The **India-Bhutan Agreement on Trade, Commerce and Transit – which was first signed in 1972** and revised most recently for the fifth time in 2016 – **establishes a free trade regime** between the two countries.

- ❖ India is **Bhutan's largest trading partner**. Since 2014, India's **merchandise trade with Bhutan has almost tripled** from USD 484 million in 2014-15 to USD 1422 million in 2021-22, accounting for about **80% of Bhutan's overall trade**, with the balance of trade in India's favour.
  - ✓ In 2021-22, **India's bilateral trade with Bhutan was USD 1422 million**, of which India's exports to Bhutan amounted to USD 877 million and India's imports from Bhutan were USD 545 million.

### Border Management

- ❖ There is a **Secretary-level mechanism** on border management and security related matters. There is also a **Border District Coordination Meeting Mechanism** between the bordering States and the Royal Government of Bhutan to facilitate coordination on border management and other related matters.

### Water Resource Management

- ❖ There is a **Joint Group of Experts (JGE) on flood management** between India and Bhutan to discuss/ assess the probable causes and effects of the recurring floods and erosion in the southern foothills of Bhutan and adjoining plains in India and to recommend appropriate measures to both Governments.

### Educational and Cultural Cooperation

- ❖ A large number of college going Bhutanese students are studying in India. It is estimated that approximately **4000 Bhutanese are studying in Under Graduate courses** in Indian Universities on a self-financing basis.

### ITEC Training Programme Scheme

- ❖ Every year GoI provides 300 training slots under ITEC programme and a further 60 slots under TCS Colombo Plan in various fields to Bhutanese for upgrading their administrative and technical skills.

### Challenges

- ❖ **China's Growing Influence:** China's increasing presence near the disputed India-Bhutan-China border and its growing economic ties with Bhutan raise concerns for India's strategic interests.
- ❖ **Delay in Projects:** Delays and disagreements regarding revenue sharing from India-Bhutan hydropower projects can create tension.
- ❖ **Trade Dependence:** Bhutan's heavy reliance on India for trade makes it vulnerable to economic fluctuations in India.
- ❖ **Hydropower Projects and Environmental Risks:** Bhutan has concerns about environmental and social impacts from hydropower projects.
- ❖ **Motor Vehicle Agreement:** India's plans for a Motor Vehicle Agreement within the Bangladesh-Bhutan-India-Nepal grouping have faced delays.
- ❖ **Power Purchasing Policy:** India's sudden change in its power purchasing policy, rigid rates, and refusal to allow Bhutan to join the national power grid and trade with third countries like Bangladesh has strained relations.

### Measures Needed

**Strengthening Economic Cooperation:** India can invest in infrastructure development, tourism, and other sectors to diversify Bhutan's economy and reduce its dependence.

- ❖ **Enhanced Connectivity:** Improved road, rail, and air links will boost trade, tourism, and people-to-people exchanges.
- ❖ **Cultural and Educational Exchange:** Programs fostering cultural understanding and educational opportunities can strengthen the bond between the two nations.
- ❖ **Strategic Dialogue:** Regular high-level talks on security and border issues can address concerns and maintain transparency.
- ❖ **Addressing Bhutan's Concerns:** India must address Bhutan's anxieties regarding China's influence through sensitive diplomacy and economic cooperation.

- ❖ **Multilateral Cooperation:** Collaboration on regional projects like hydropower and infrastructure development can be pursued through organizations like BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical Cooperation).

### Way Forward

- ❖ **Maintaining a strong and mutually beneficial relationship with Bhutan** is crucial for India's strategic interests in the region.
- ❖ **By addressing challenges and implementing the measures** required, India and Bhutan can ensure a prosperous and secure future for both nations.

## INDIA AND BRAZIL 2+2 DIALOGUE

**Context:** India and Brazil concluded the **first '2+2' defence and foreign ministerial dialogue.**

### About

- ❖ Discussions spanned defence, space, energy, critical minerals, tech, counter-terrorism and regional, multilateral & other issues of mutual interest.
- ❖ It was co-chaired by an additional secretary in the external affairs ministry and joint secretary in the defence ministry.

### What are 2+2 meetings?

- ❖ The 2+2 meetings signify the **participation of two high-level representatives**, Ministers holding Foreign and Defence portfolios, from each of the two countries who aim to enhance the scope of dialogue between them.
- ❖ Having such a mechanism **enables the partners to better understand and appreciate each other's strategic concerns** and sensitivities taking into account political factors on both sides, in order to build a stronger, more integrated strategic relationship.
- ❖ India has held 2+2 meetings with ministers from the **USA, Australia, Japan, the United Kingdom and Russia.**

### Brief on India- Brazil Relations

- ❖ **Diplomatic Relations:** Relations were established in **1948**, and the two countries have been **Strategic Partners since 2006.**
  - ✓ Both sides also have several **Joint Working Groups** to take forward sectoral cooperation.
- ❖ **Trade Relations:** In 2022, the bilateral trade expanded by **32%** to US\$15.2 billion (India's exports US\$8.8 billion & Imports – US\$6.4 billion).
  - ✓ India and Brazil have established **Trade Monitoring Mechanism** as an institutional mechanism to monitor and identify bottlenecks in bilateral trade and take appropriate measures to address them.
- ❖ **Defence & Security Cooperation:** India and Brazil signed an agreement in 2003 for cooperation in defence. Meetings of Joint Defence Committee (JDC) are held as an institutionalized mechanism for defence cooperation.
- ❖ **Security Cooperation:** India and Brazil established a Strategic Dialogue mechanism in 2006 to cover regional and global issues of mutual concern.
  - ✓ The two countries have an Extradition Treaty, Mutual Legal Assistance Treaty in Criminal Matters and an Agreement of Transfer of Sentenced Persons in place.
- ❖ **Space Cooperation:** India and Brazil signed a framework agreement for peaceful use of outer space in 2004 as well as an Agreement for inter-institutional cooperation between the space agencies.
  - ✓ Both countries have been collaborating in Data sharing and satellite tracking of Indian satellites.
- ❖ **Multifora Relations:** India and Brazil share a very close and multifaceted relationship both at bilateral level as well as in plurilateral fora such as BRICS, BASIC, G-20, G-4, IBSA, International Solar Alliance, as well as in the larger multilateral bodies such as the UN, WTO, UNESCO, and WIPO.

### Challenges in the Relations

- ❖ **Geopolitical Competition:** Both India and Brazil are emerging powers with aspirations for greater global influence. This can sometimes lead to competition, particularly in international forums like the UN, where both countries seek greater representation and influence.
- ❖ **Trade Barriers:** Trade between India and Brazil has not reached its full potential, partly due to various trade barriers and protectionist measures in both countries. These barriers hinder the growth of bilateral trade and investment.
- ❖ **Infrastructure and Connectivity:** Improving infrastructure and connectivity between the two countries remains a challenge.
  - ✓ Better air and sea connectivity, as well as improved transportation links, are essential for boosting trade and people-to-people contacts.

### Way Ahead

- ❖ Overcoming the challenges requires sustained diplomatic efforts, enhanced economic cooperation, and a commitment to finding common ground on global issues.
- ❖ Despite the obstacles, the potential benefits of a stronger India-Brazil partnership make overcoming these challenges a worthwhile endeavor.

## INDO-BHUTAN TIES: A STRONG PARTNERSHIP

**Context:** India and Bhutan have been the closest of partners and the best of friends over the past 50 years and more. Both need constant tending, regular dialogue and a lot of care and cooperation.

### Overview of India-Bhutan Relations

- ❖ **Diplomatic ties:** Formal diplomatic ties between the two countries were established in 1968, with the cornerstone being the **Treaty of Friendship and Cooperation** signed in **1949**, and subsequently renewed in February 2007.
- ❖ **High-level exchanges:** Over the years, high-level exchanges have played a pivotal role in nurturing the strong bond between India and Bhutan.
- ❖ **Economic partnership:** The economic partnership between India and Bhutan has flourished over the years, driven by the **India-Bhutan Agreement on Trade, Commerce, and Transit**.
  - ✓ This **agreement, first signed in 1972** and revised multiple times, has facilitated a free trade regime between the two countries, promoting bilateral trade and economic growth.
  - ✓ **India stands as Bhutan's top trade partner**, both in terms of imports and exports.
  - ✓ The bilateral trade volume has seen a significant surge, reaching INR 11,178 crores in 2022.
- ❖ **India's investments in Bhutan** span various sectors, including banking, manufacturing, electricity generation, and IT services, contributing to Bhutan's socio-economic development and fostering closer economic integration.
  - ✓ India has been a steadfast development partner for Bhutan, extending economic assistance to support its socio-economic progress since the 1960s.
    - India's contribution to Bhutan's 12th Five Year Plan, amounting to Rs 5000 Cr., underscores its commitment to supporting Bhutan's developmental aspirations.
- ❖ **Hydropower cooperation:** it remains a cornerstone of bilateral economic cooperation between India and Bhutan.
  - ✓ Bhutan's hydro-power potential has been harnessed through mutually beneficial partnerships, contributing significantly to its socio-economic development.
  - ✓ The commissioning of projects like the **Mangdechhu Hydroelectric Project**.
  - ✓ The Punatsangchhu-II hydropower project is expected to be completed in 2024 — yet another successful example of the government-to-government model of cooperation in hydropower.
- ❖ **Educational and cultural ties:** They are integral to their bilateral relations.

- ✓ **India has been a key destination for Bhutanese students** seeking higher education, with over 1000 scholarships provided annually by the Government of India.
- ✓ Additionally, cultural exchanges and initiatives under the India-Bhutan Foundation have strengthened people-to-people ties, fostering greater understanding and collaboration between the two societies.
- ❖ **Human Resource Development:** The **Nehru Wangchuck Scholarship Scheme**, ICCR Scholarships, and ITEC program have further facilitated skill development and capacity building in Bhutan.
- ❖ **New avenues for collaboration:** including digital initiatives, space cooperation, and technology partnerships.
  - ✓ Projects like **'Digital Drukyl'** and the joint development of satellites reflect the commitment to harnessing technology for mutual benefit and socio-economic progress.
  - ✓ The **interoperability of flagship projects like RuPay and the BHIM** app demonstrates the evolving nature of the bilateral relationship, with a focus on leveraging digital innovations for inclusive growth and development.
- ❖ **Recent developments**, including progress on rail connectivity links and the establishment of Integrated Check Posts, underscore the commitment to enhancing trade and connectivity between India and Bhutan.

### Way Forward

- ❖ As Prime Minister Narendra Modi prepares to visit Bhutan, the stage is set for further strengthening the multifaceted cooperation between the two neighbouring nations across various sectors.
- ❖ In the years ahead, India must contribute to the success of the Gelephu Mindfulness City and can perhaps consider the following measures:
  - ✓ commence direct flights between Mumbai/Delhi and Gelephu;
  - ✓ provide our technology and knowledge in building hard infrastructure to Bhutan (the private sector will take the lead);
  - ✓ encourage high-end Indian tourists and businesspersons to visit Gelephu in controlled numbers;
  - ✓ Encourage Indian businesses to set up shop in the city.

CivilsTap Hlmachal

## SOCIAL ISSUES

### A WOMEN'S URBAN EMPLOYMENT GUARANTEE ACT

**Context:** Recently, the urban employment landscape in India for women has been a topic of concern these days, and it is found that there is a high unmet demand for employment among urban women.

#### About

- ❖ The **Periodic Labour Force Survey (PLFS)** indicates that there has been an increase in women's workforce participation from 22% in 2017-18 to 35.9% in 2022-23.
  - ✓ However, this rate is still lower than the global average of 47% and significantly lower than some other countries like China, which has a female LFPR of 60%.
- ❖ Despite the increase, the **female LFPR in India is still low.**
  - ✓ **In Rural Areas:** FLFPR has increased to 41.5% in 2022-23 from 24.6% in 2017-18;
  - ✓ **In Urban Areas:** FLFPR has increased to 25.4% in 2022-23 from 20.4% in 2017-18, and it pegs women's employment rate in urban areas at 22.9% in the last quarter of 2023.

#### Current Scenario (Unmet Demand)

- ❖ There are clear signs of high unmet demand for employment among urban women. A much larger share of unemployed women in urban areas are seeking employment compared to rural areas.
  - ✓ The **unemployment rate** (*a measure of how many would like employment irrespective of whether they are actively seeking it or not*) in **urban areas is 9%** compared to **4% in rural areas.**
  - ✓ There are **two types of unemployment**, like individuals who would like to work and are actively seeking a job; and those who would like to work but may not be actively seeking a job.
- ❖ **Wastage of Potential:** Nearly **25% of urban women** have completed higher secondary education compared to **5% in rural areas.**
  - ✓ The **low urban employment rates** among women points to wastage of much potential.
- ❖ **MGNREGA and Deendayal Antyodaya Yojana National Rural Livelihood Mission (DAY-NRLM):** These initiatives have been pivotal in providing financial autonomy to **women in rural areas.**
  - ✓ More than half the MGNREGA workforce are women.
- ❖ However, **urban realities are different.** Social norms, lack of safety, and hostile transportation options are some of the factors inhibiting urban women to enter the workforce.

#### Causes and Reasons for Urban Unemployment Among Women in India

- ❖ **Social Norms and Safety Concerns:** Social norms, lack of safety, and hostile transportation options are some of the factors inhibiting urban women to enter the workforce.
- ❖ **Gender Segregation of Occupation:** From the demand side perspective, it is explained by the fact that gender segregation of occupation and sector exists in India and lack of growth in the demand for labour in sectors dominated by women have resulted in low participation.
- ❖ **Economic Factors:** The rapid emergence and adoption of new technologies as a response to the pandemic caused high unemployment due to business failures and the loss of jobs.
  - ✓ As a result, the skill gap between job seekers with traditional credentials kept widening.
- ❖ **Population Growth:** Increase in population and labour force is the cause of rising unemployment in India.
  - ✓ That's why India's economic growth can't keep up with the increased population.
- ❖ **Lack of Adequate Investment:** Experts and campaigners feel that a lack of adequate investment in the unorganised; Micro, Small and Medium Enterprises (MSME); and rural development sectors, combined with safety concerns and regressive social norms, is keeping women underemployed or unemployed.
- ❖ **High Cost:** It is important to note that assuming 150 days of work per year at ₹500 as daily wages, the **wage component**, to be funded by the Union government, would then cost around **1.5% of the GDP.**
  - ✓ Adding **material and administrative costs** to this is likely to make it **around 2%.**

### Possible Solution Proposed

- ❖ The government has also introduced various protective provisions in the labour laws for equal opportunity and a congenial work environment for women workers.
- ❖ **The Need for WUEGA:** To address overall urban unemployment, **some States have an urban employment programme**, while these are **not restricted only to women**.
  - ✓ There is a need for the **WUEGA** and **Decentralised Urban Employment and Training Scheme** at a national level, as MGNREGA for rural women.

### Vision for WUEGA

- ❖ It envisioned a WUEGA where women form **at least 50% (ideally 100%)** of the programme management staff.
- ❖ Involving **women and local communities** can also potentially strengthen the constitutional mandate of decentralisation.
- ❖ Each worksite would have **essential worksite facilities** including childcare facilities. Work must be available within a 5-km radius and public transportation must be free for women.

### Major Urban Employment Programmes

- ❖ Ayyankali Urban Employment Guarantee Scheme (AUEGS), Tripura's Urban Employment Programme (TUEP), and West Bengal's Urban Employment Scheme were early initiatives in urban employment programmes.
- ❖ Women-led initiatives in Karnataka: Women handle end-to-end waste management in gram panchayats of selected districts including collection and driving of the 'Swacch' vehicles.
  - a. Not only has the initiative been a success, it has also enabled several women to acquire driving licences.
- ❖ **Atmanirbhar Bharat Rojgar Yojana (ABRY):** Launched as part of Atmanirbhar Bharat package 3.0, this scheme incentivizes employers for creation of new employment along with social security benefits and restoration of loss of employment during Covid-19 pandemic.
- ❖ **Pradhan Mantri Rojgar Protsahan Yojana (PMRPY):** Launched to incentivise employers for creation of new employment.
- ❖ **National Career Service (NCS) Project:** This project provides a variety of career-related services like job matching, career counselling, vocational guidance, information on skill development courses, apprenticeship, internships etc.
- ❖ **Pradhan Mantri Garib Kalyan Rojgar Abhiyaan (PMGKRA):** This scheme was launched to provide immediate employment & livelihood opportunities to the distressed, to saturate the villages with public infrastructure and creation of livelihood assets.
- ❖ **Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM):** This scheme aims to reduce poverty and vulnerability of the urban poor households by enabling them to access gainful self-employment and skilled wage employment opportunities.
- ❖ **PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi):** This scheme was launched to facilitate collateral-free working capital loans up to ₹10,000 of 1-year tenure, to approximately 50 lakh street vendors, to resume their businesses post Covid-19 lockdown.

### Conclusion and Way Forward

- ❖ A detailed list of possible urban works such as plantation and harvesting reeds on floating wetlands already exist; these **should be supplemented based on local needs and wider consultation**.
  - ✓ Incentives such as **automatic inclusion in welfare boards** can be created; these could act as agencies to provide **maternity entitlements, pensions, and serve as resources for emergency funds**.
- ❖ Reducing gender gaps and increasing women's empowerment are part of the **Sustainable Development Goals**. Notwithstanding **ethical and constitutional imperatives**, there is also evidence suggesting that increasing women's employment rates can be an engine for economic growth.



- ❖ It is also important to address the societal norms and challenges that inhibit women from participating in the workforce.
  - ✓ Additionally, more initiatives and policies aimed at encouraging women's participation in the workforce can help in further improving the female LFPR in India.

## DROP-IN FERTILITY RATE IN INDIA

**Context:** Recently, a research paper from Lancet has released the **forecast of fertility rate in India.**

### Major Findings

- ❖ **Drop in Fertility Rate:** India's fertility rate has dropped from nearly **6.2 in 1950** to just **under 2 in 2021**. It is projected to dip further to **1.29 in 2050 and 1.04 in 2100**.
- ❖ **Depleting Working Population:** India's total fertility rate (TFR) — the average number of children born per woman — is dipping irreversibly to 1.29, far lower than the replacement rate of 2.1.
  - ✓ This means a rapidly depleting working age population.
- ❖ **Increase in Senior Citizens:** By 2050, one in five Indians will be a senior citizen while there will be fewer younger people to take care of them.

### Reasons for Decline in Fertility Rate in India

- ❖ **Government Policy:** Post-independence, there was a need to restrict the population. So the Family Welfare Programme were intended to convince people to have no more than two children.
  - ✓ Slowly that behaviour change started showing up.
- ❖ **Decline in Infant Mortality:** Due to various maternal and child health-related programmes and successful immunisation infant mortality declined in India substantially and small families became the norm.
- ❖ **Rise in Female Literacy:** Due to the rise of female literacy and women's participation in the workforce the career consciousness, financial returns and economic independence have increased in India which means that women are reconsidering their options of having a second child.
- ❖ **Economic Factors:** Economic factors such as rising living costs, the need for dual incomes to support households, and the desire for better standards of living have contributed to smaller family sizes.

### Consequences

- ❖ **Rise in Elderly Population:** The consequences of fertility decline will be that the share of the elderly in the population will increase sharply.
  - ✓ By 2050 the share of senior citizens in India will be more than 20 percent, that is one five people.
- ❖ **Labor Force Decline:** With fewer young people entering the workforce due to a declining fertility rate, this can impact economic growth and industries may face challenges in finding skilled workers.
- ❖ **Healthcare Challenges:** As the population ages, there is likely to be increased demand for healthcare services, this can strain healthcare systems and require adjustments in healthcare policies and infrastructure.
- ❖ **Challenges for Social Security Systems:** Declining fertility rates can pose challenges for social security systems, including pensions and retirement funds.

### Government Initiatives

- ❖ **National Health Mission (NHM):** It is aimed at strengthening healthcare systems, including maternal and child health services.
  - ✓ NHM provides essential healthcare services, including antenatal care, postnatal care, family planning services, and child immunization, which indirectly influence fertility rates by promoting maternal and child health.
- ❖ **Family Planning Program:** India has a long-standing family planning program aimed at promoting contraceptive use and reproductive health awareness.

- ✓ The program provides various contraceptive methods free of cost or at subsidized rates, conducts family planning counseling, and promotes awareness about the importance of family planning.
- ❖ **Pradhan Mantri Matru Vandana Yojana (PMMVY):** Under the scheme financial assistance is provided to pregnant and lactating mothers for their first live birth.
  - ✓ The scheme aims to improve maternal and child health outcomes and indirectly supports fertility by promoting safe motherhood.

### Way Ahead

- ❖ The challenges are still a few decades away for India but the country needs to start acting now with a comprehensive approach for the future.
- ❖ **Models from Scandinavian countries** like Sweden and Denmark, which are dealing with these challenges by supporting new families can be replicated.
  - ✓ They are providing affordable childcare, investing in healthcare and taking on large-scale male-engagement initiatives to build gender equity.
- ❖ **Distribution of Household chores:** For women to be able to manage careers with motherhood, it would be crucial for men to take greater responsibility for household and care work.
- ❖ **Economic policies that stimulate growth and job creation**, alongside social security and pension reforms, will also be essential in adapting to and mitigating the impacts of declining fertility rates.

## WOMEN REPRESENTATION IN POLITICS

**Context:** The year 2024 is being hailed as the biggest year for democracy, with 45% of the global population preparing to exercise their voting rights.

And, it has become imperative to assess how women are represented in politics and leadership roles.

### Women's Political Participation

- ❖ Women's representation in political spheres improved in the latter half of the 20th century, with significant progress made in many nations in securing voting rights and parliamentary seats, and in climbing to the highest political offices.
  - ✓ New Zealand extended universal suffrage to women in 1893.
  - ✓ Norway first saw women enter parliament in 1907
- ❖ As of 10 January 2024, there are 26 countries where 28 women serve as Heads of State and/or Government.
  - ✓ 15 countries have a woman Head of State, and 16 countries have a woman Head of Government
- ❖ First-time compiled data by UN Women show that **women represent 22.8 percent of Cabinet members heading Ministries**, leading a policy area as of 1 January 2023 .

### Status in India

- ❖ India has a history of marginalisation and exploitation of women framed by patriarchal social structures and mindsets.
- ❖ Beginning in the 19th century, **social reform movements** succeeded in pushing for women's well-being and empowerment.
- ❖ The Indian freedom movement, starting with the **swadeshi in Bengal (1905-08)** also witnessed the impressive participation of women, who organised political demonstrations and mobilised resources, as well as occupied leadership positions in those movements.
- ❖ Women representation in Lok Sabha has increased from 5% in the first Lok Sabha to 15% in the current Lok Sabha.

- ✓ Scandinavian countries such as Sweden and Norway, and South Africa have more than 45% women representation **in their national legislatures.**
- ✓ **Currently, 15% of Lok Sabha MPs and 13% of Rajya Sabha MPs are women.**

### Importance

- ❖ Women's equal participation and leadership in political and public life are essential to achieving the **Sustainable Development Goals by 2030.**
- ❖ Women's representation in the national parliament is a key indicator of the extent of **gender equality in parliamentary politics.**
- ❖ It will ensure that women form a strong lobby in Parliament to **fight for issues that are often ignored.**
- ❖ There is now evidence that women as panchayat leaders have **shattered social myths**, been more accessible than men, controlled the stranglehold of liquor, invested substantially in public goods such as drinking water, helped other women express themselves better, reduced corruption, prioritised nutrition outcomes, and changed the development agenda at the grassroots level.
- ❖ India has a high percentage of crimes against women, low participation of women in the workforce, low nutrition levels and a skewed sex ratio.
  - ✓ To address all these challenges, it is argued, we need more women in decision-making.
- ❖ The rate at which women accumulate assets while in office is 10 percentage points lower, per year than among men.

### Challenges in Women's Representation in National and State Legislatures

- ❖ **Societal prejudices**, a male-dominated political party structure, family obligations, resource scarcity, and various structural hindrances all impede greater participation among women as contestants and winners in parliamentary or state assembly elections.
- ❖ **Election campaigns in India are extremely demanding** and time-consuming. Women politicians, with family commitments and the responsibilities of child care, often find it difficult to fully participate.
- ❖ Women politicians have been constantly subjected to humiliation, inappropriate comments, abuse and threats of abuse, making participation and contesting elections extremely challenging. Financing is also an obstacle as many women are financially dependent on their families.
- ❖ There is a general perception that women should be preferred for **"soft" ministries** like Social Welfare, Culture, Women and Child Development.

### Related Efforts

- ❖ After India attained independence, its Constitution guaranteed equal status for men and women in all political, social and economic spheres.
- ❖ **Part III of the Constitution** guarantees the fundamental rights of men and women.
  - ✓ The Directive Principles of State Policy ensure economic empowerment by providing for equal pay for equal work by both men and women, humane conditions of work, and maternity relief
- ❖ At the same time, India has taken a number of steps towards women's empowerment in other domains, such as marriage and employment.
  - ✓ For example, the Supreme Court has conferred daughters the equal status of a coparcener in Hindu families, providing them inheritance rights.
  - ✓ It has also ruled that "women officers in the army should be entitled to permanent commission and command postings in all services other than combat, and they have to be considered for it irrespective of their service length.
- ❖ In 1992, the **73rd and 74th amendments** to the Constitution provided for reservation of one-third of the total number of seats for women in Panchayati Raj Institutions (PRIs) and municipal bodies.

- ✓ The amendment intended to improve women's participation in decision-making at the grassroots.

### **Conclusion and Way Forward**

- ❖ Given the deep structural constraints that impede progress in women's political participation, institutional transformation can usher in inclusive politics, albeit only to a certain degree.
- ❖ Another imperative is social transformation.
  - ✓ better educational opportunities for women, their financial stability, the relative erosion of social prejudices, coupled with greater media awareness have compelled political parties to create spaces for women's participation.
- ❖ As the movement for women's political emancipation gathers momentum, women's organisations and networks within political parties and civil society must continue to help them assert their presence within the larger political and social landscape.
- ❖ Women's political mobilisation can be ramped up to compel urgent institutional reform towards greater representation of women in India's Parliament and state assemblies.
- ❖ More women are needed in these platforms to transform the discourse on governance and policy-making, and bring India closer to becoming a truly inclusive and representative democracy.



CivilsTap Hlmachal

# GENERAL STUDIES 3.

## ECONOMY

### WHITE REVOLUTION 2.0

**Context:** The government's latest **Household Consumption Expenditure Survey (HCES)** for 2022-23 shows **milk emerging as India's top food spend item.**

#### About

- ❖ **The National Sample Survey Office (NSSO) under Ministry of Statistics and Programme Implementation** has been conducting household surveys on **consumption/consumer expenditure** at regular intervals as part of its rounds, normally of **one-year duration**.
- ❖ **Since 1972**, NSSO has been conducting the Consumer Expenditure Survey.
- ❖ It is designed to collect **information on consumption of goods and services** by the households.

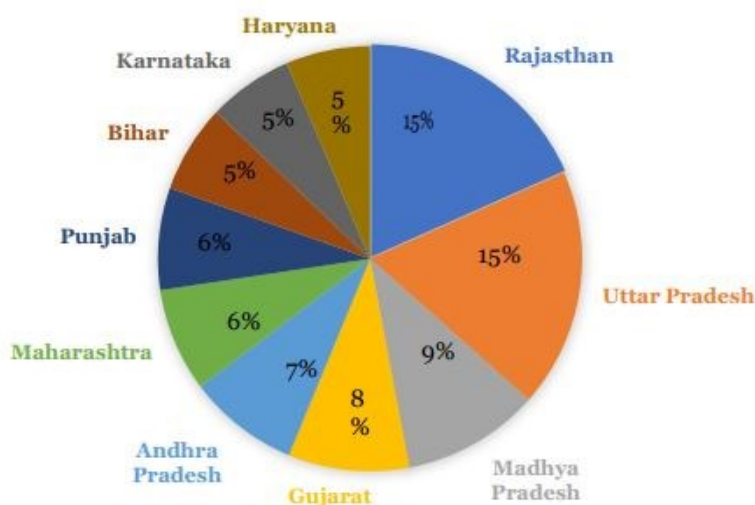
#### Major Findings

- ❖ **The income levels of both** the Urban and Rural households have risen since the last survey, with Rural households showing a sharper growth in spending.
- ❖ Of the total expenditure, **46%** was spent on food items in Rural households and **39%** in Urban homes in 2022-23.
- ❖ The monthly value of milk and dairy products consumed by an **average person in rural India**, at Rs 314, was ahead of vegetables, cereals, egg, fish & meat, fruits, edible oil, spices and pulses.
- ❖ **For urban India also** Milk (Rs 466) emerged as top item followed by fruits, vegetables, cereals, egg, fish & meat, edible oil, spices and pulses.

#### Milk Production in India

- ❖ India is the largest producer of milk in the world, contributing **24% of global milk production in 2021-22.**
- ❖ **The top 5 milk-producing states are: Rajasthan, Uttar Pradesh, Madhya Pradesh, Gujarat and Andhra Pradesh** together contribute **53%** of total milk production in the country.

Figure 2: Top 10 Milk Producing States



#### Challenges Associated with Increased Demand

- ❖ **Inflation:** The price of milk has gone up from Rs 42 to Rs 60 per litre in the last five years, according to the department of consumer affairs.

- ❖ **Rising Input Cost:** The cost of fodder, feed and raw materials/ingredients have increased significantly.
  - ✓ Dairies have had to hike procurement prices paid to farmers and, in turn, pass-through the same to consumers.
- ❖ **Purchasing Limit of Consumer:** There's a limit to how much more the consumer can pay for milk without it causing demand destruction.

### What can be the Solution?

- ❖ If farmer incomes are to be raised without shrinking domestic demand and eroding the global competitiveness of the Indian dairy industry, the only solution is to **reduce the cost of milk production**.

### White Revolution

- ❖ The White Revolution in India, also known as Operation Flood, was a significant dairy development program implemented to enhance milk production and address the country's milk scarcity issues.
- ❖ It was launched in 1970 by the National Dairy Development Board (NDDB) under the leadership of Dr. Verghese Kurien, often referred to as the "Father of the White Revolution."

### How can the Cost of Milk Production be Reduced?

- ❖ **Improved Breeding and Genetics:** Investing in high-yield dairy cattle breeds can increase milk production efficiency.
  - ✓ Cross-breeding programs aimed at developing more resilient and higher-yielding breeds suitable for Indian conditions can be beneficial.
- ❖ **Nutrition Management:** Providing balanced and cost-effective feed and nutrition to dairy animals can enhance milk yield while reducing input costs.
- ❖ **Modals for Reducing the cost of Fodder:** Amul is putting up a 30-tonnes-per-day Total Mixed Ration (TMR) plant at Sarsa in Anand.
  - ✓ TMR will contain dry and green fodder, along with concentrates, vitamins and mineral mixtures, in a ready-to-eat mashed form for animals.
  - ✓ It would save farmers the cost of purchasing and storing fodder separately, and administering it in addition to cattle feed.
- ❖ **Healthcare and Disease Management:** Ensuring proper healthcare and disease control measures for dairy animals can prevent losses due to diseases and improve overall productivity.
- ❖ **Cooperative Farming and Collective Bargaining:** Encouraging small-scale dairy farmers to form cooperatives can help them access resources, infrastructure, and markets more effectively.
- ❖ **Government Support and Policy Reforms:** Government policies that provide subsidies for essential inputs like feed, veterinary care, and equipment can significantly reduce production costs for dairy farmers.
- ❖ **Research and Development:** Investing in research and development aimed at developing innovative and cost-effective solutions for dairy farming challenges can lead to long-term improvements in productivity and cost reduction.

### Steps Taken by Government for the Promotion of Dairy Sector in India

- ❖ **Rashtriya Gokul Mission:** It was launched in 2014, to conserve and develop indigenous cattle breeds.
  - ✓ **Aim:** To enhance the productivity and genetic improvement of indigenous cattle.
- ❖ **National Programme for Dairy Development (NPDD):** NPDD has been in place since 2014 and aims to build or strengthen infrastructure for the production of high-quality milk as well as for the procurement, processing, and marketing of milk and milk products through the State Implementing Agency or State Cooperative Dairy Federation.

- ❖ **Dairy Entrepreneurship Development Scheme (DEDS):** DEDS is being implemented by the Department of Animal Husbandry, Dairying, and Fisheries to create self-employment opportunities in the dairy industry.
  - ✓ It provides financial assistance to individuals for setting up small to medium-scale dairy ventures.
  - ✓ **The National Bank for Agriculture and Rural Development** is carrying out the programme.
- ❖ **National Animal Disease Control Programme (NADCP):** It is a flagship scheme launched in **2019** for control of Foot & Mouth Disease and Brucellosis by vaccinating 100% cattle, buffalo, sheep, goat and pig population.
- ❖ **National Livestock Mission (NLM):** The NLM, launched by the Ministry of Agriculture, aims to ensure sustainable development of the livestock sector, including dairy farming.
  - ✓ It focuses on increasing the productivity of livestock, improving their health, and providing support for fodder and feed resources.

### Way Ahead

- ❖ Faster vaccination drives to overcome situations like Lumpy skin disease death.
- ❖ Robust and effective value chain to overcome the supply chain disruption to maintain the demand for milk and milk products.
- ❖ By implementing strategies in a coordinated manner, it's possible to reduce the cost of milk production in India while improving the livelihoods of dairy farmers and ensuring a sustainable and thriving dairy industry.

## THE 13TH MINISTERIAL CONFERENCE OF WTO

**Context:** Recently, it was found that the '**Apex Decision Making Body** of World Trade Organization (WTO)' made **little progress** on key issues that affect global trade on its **13th meeting**.

### WTO (World Trade Organisation)

- ❖ It is the **only global international organisation** dealing with the rules of trade between nations.
- ❖ Its main function is **to ensure that trade flows** as smoothly, predictably, and freely as possible.

#### About the 13th Ministerial Conference of the WTO:

- It took place in **Abu Dhabi, United Arab Emirates**.
- It was a significant event in the **global trade landscape**, with representatives from **164 WTO-member countries** gathering to discuss a wide range of issues affecting international trade.
- It saw the **formal joining of Comoros and Timor-Leste** as members of the WTO.

### Formation of WTO

- ❖ **Predecessor: The General Agreement on Tariffs and Trade (GATT)** was established by a multilateral treaty of 23 countries in 1947 after World War II.
  - ✓ GATT was designed **to provide an international forum** that **encouraged free trade** between member states by **regulating and reducing tariffs** on traded goods and by providing **a common mechanism for resolving trade disputes**.
- ❖ **The Marrakesh Agreement:** The establishment of the WTO was agreed upon during the **Uruguay Round of GATT negotiations**, which took place from 1986 to 1994.
  - ✓ It was signed by 123 nations on April 15, 1994, marking the culmination of the Uruguay Round and the official establishment of the WTO.

- ✓ It expanded upon the scope of the GATT to **include new areas such as services, intellectual property, dispute resolution, and trade policy review mechanisms.**
- ❖ The WTO officially commenced operations on January 1, 1995, in accordance with the **1994 Marrakesh Agreement**, replacing the GATT.

### Organisational Structure of WTO

- ❖ **Ministerial Conference:** The WTO's **apex decision-making** body is the **Ministerial Conference**, which *usually* takes place **every two years**.
- ❖ **General Council:** It is just below the Ministerial Conference that meets several times a year at the WTO's headquarters in Geneva.
  - ✓ It meets as the **Trade Policy Review Body** and the **Dispute Settlement Body**.
  - ✓ **Trade Related Intellectual Property Rights (TRIPS) Council:** It is for the Goods, Services, and Intellectual Property, and it reports to the General Council.

### Dispute Settlement Mechanism of WTO:

- ❖ The WTO has a Dispute Settlement Mechanism to resolve trade disputes between its member countries, and has one of the most active international dispute settlement mechanisms in the world.
  - a. Since 1995, over 350 rulings have been issued.
- ❖ Appellate Body (Dispute Settlement System of WTO): These play a crucial role in resolving trade disputes among WTO members.
  - a. The Appellate Body was established in 1995 under Article 17 of the Understanding on Rules and Procedures Governing the Settlement of Disputes.

### Significance of the WTO

- ❖ Its main function is to ensure that global trade flows as smoothly, predictably, and freely as possible. These include:
  - ❖ **Facilitating Global Trade:** The WTO operates a system of trade rules and provides a forum for governments to negotiate trade agreements.
    - ✓ It helps to reduce obstacles to international trade and ensures a level playing field for all, thus contributing to economic growth and development.
    - ✓ The WTO has been a force for globalisation, with both positive and negative effects.
  - ❖ **Mediating Trade Disputes:** The WTO plays a vital role in mediating trade disputes.
    - ✓ It helps to resolve conflicts and disagreements over trade policies and practices, ensuring that trade relations among countries remain fair and balanced.
  - ❖ **Supporting Developing Countries:** The WTO supports the needs of developing countries.
    - ✓ As an influential member of the WTO, India, for example, has been at the forefront of building fair global laws, statutes, and shields and supporting the concerns of the developing world.
    - ✓ By being a member of the WTO, several countries are now trading with India, thus giving a boost to production, employment, the standard of living, and an opportunity to maximise the use of the world's resources.

### Challenges and Criticisms Ahead of WTO

- ❖ **Impasse in Negotiations:** The current impasse in the WTO negotiations has led member countries to believe in the necessity of carrying out urgent reforms.
  - ✓ At the core of the divide within the WTO is the Doha Development Agenda, which the developed countries sought to jettison in favour of a new agenda that includes, amongst others, e-commerce, investment facilitation, MSMEs, and gender.
- ❖ **Dispute Settlement Mechanism:** Reinstating a fully functional WTO dispute settlement body to resolve trade disputes between countries could take longer than expected as there continues to be wide differences between developed and developing countries over the issue.



- ✓ The US, since 2017, has been blocking the appointment of new judges to the WTO's seven-member appellate court as it believes that the body is hurting its interest.
- ❖ **Unilateral Protectionist Measures:** India has expressed serious concerns in a WTO meeting over an increase in the use of trade protectionist measures by certain countries in the name of environment protection.
  - ✓ The **European Union's (EU) decision to impose a carbon tax** (a kind of import tax) on sectors such as steel and fertiliser; and adoption of deforestation regulation by the 27-nation bloc are some examples.
- ❖ **Definition of 'Developing Country':** The push for a change in the definition of 'developing country' under the principle of special and differential treatment (S&DT), aimed at upgrading certain developing countries, will deeply impinge on the status of emerging economies such as India, China, South Africa, Turkey, Egypt, etc.
- ❖ **Fisheries Subsidies:** Among the **current negotiations at the WTO**, nothing commands more attention than the fisheries subsidies negotiations. These subsidies often lead to overcapacity and overfishing.
  - ✓ India can lead the way in finding a landing zone by urging others to settle for the lowest common denominator, while seeking permanent protection for traditional and artisanal farmers who are at the subsistence level of survival.
- ❖ **Agriculture and Food Security:** One of the **long-standing issues** discussed at the conference was public stockholding for food security.
  - ✓ **Public Stockholding** is a policy tool under which governments procure crops like rice and wheat from farmers at a **minimum support price (MSP)**, store, and distribute food grains to the poor.
  - ✓ It is continuously persisted and carried forward from the **12th Ministerial Conference held at Geneva**.
  - ✓ However, the 13th conference **ended without finding a permanent solution** to the public stockholding issue.

### Challenges Specific to India

- ❖ India has always faced pressure from developed nations, including the US, EU and Canada, to reduce the subsidy it gives to farmers.
- ❖ WTO rules deal strictly with **product-specific support** to producers (as given by India) but they do not discourage '**Green Box**' subsidies.
  - ✓ India has fought for dropping the distinction between green box and other subsidies.
- ❖ **Peace Clause** only includes the government programmes started before 2013 and the Indian government wants programmes started after 2013 to be included as well.
- ❖ **Special and differential treatment:** The gaps between the developing and developed members have widened in many areas, emphasising that the special and differential treatment (S&D) must continue.
  - ✓ Such treatment has been a treaty-embedded and non-negotiable right for all developing members.

### Suggested Reforms in the WTO

- ❖ To reinvigorate the WTO, reform needs to cover **all three pillars**.
  - ✓ **Negotiation:** It needs to be more responsive to the changing dynamics of global trade.
  - ✓ **Dispute Settlement Mechanism:** It needs to be made more efficient and effective.
  - ✓ **Monitoring and Deliberation:** It needs to be strengthened to ensure better compliance by member countries.
- ❖ **Accept a diluted Appellate Body:** While the US has so far opposed the AB in principle, it may consider an Appellate Body with limited powers.

- ✓ The powers of the Appellate Body can be truncated in various ways, such as requiring it to be largely deferential to the parties to the dispute, stating that Appellate Body rulings will not have a persuasive value, etc.
- ❖ **Resurrect the Appellate Body in its original form with one important change:** Countries will have the option to opt out of Appellate Body's compulsory jurisdiction.
  - ✓ This option is to resurrect the Appellate Body in the same form as it existed till 2019.
- ❖ **India** strongly supports robust WTO **reforms and modernisation agenda**, it stressed that the reform process should take place in the General Council and other regular bodies too.
  - ✓ India, among other countries, has been actively pitching for WTO reforms and pressing for better dispute settlement mechanisms. At the upcoming G20 meeting, India will push for reforming and strengthening the WTO.
  - ✓ At least 60 countries including India have proposed a **new method to calculate** subsidies given to purchase, stockpile and distribute food to ensure food security for developing and poor nations.

### Conclusion and Way Forward

- ❖ The need for **WTO reform is urgent** and must be addressed on a top priority basis. It is crucial for the future of global trade and the world economy.
  - ✓ The WTO must adapt to the **changing dynamics of global trade** and ensure that it continues to play its role effectively in the years to come.
- ❖ Despite the lack of consensus on key issues, the conference did result in some outcomes. The **members agreed to extend the moratorium** on imposing import **duties on e-commerce trade** for two more years.
  - ✓ The WTO continues to strive towards its goal of ensuring that trade flows as smoothly, predictably, and freely as possible.

## LEGALISING THE MINIMUM SUPPORT PRICE (MSP)

**Context:** Recently, the groups of farmers asked for a legal guarantee for purchasing crops at Minimum Support Price (MSP).

### Minimum Support Price (MSP)

- ❖ It is a form of market intervention by the Central Government to insure agricultural producers against any sharp fall in farm prices.
- ❖ It protects the producer- farmers against distress sale during bumper production years.

### Current Status of MSP

- ❖ The Union Government sets a MSP for **23 crops** before the sowing period every year, based on a formula of one-and-a-half times production costs.
  - ✓ It is implemented **mostly for rice and wheat** mainly because India has vast storage facilities for these grains and uses the produce for its public distribution system (PDS).
- ❖ It takes into account both paid-out costs such as seeds, fertilisers, pesticides, fuel, irrigation, hired workers and leased-in land, as well as the imputed value of unpaid family labour.
  - ✓ However, there is **currently no statutory backing** for these prices, nor any law mandating their enforcement. A farmer cannot demand MSP as a matter of right.

### Crops Covered under MSP

- ❖ Kharif Crops (*total 14*) like paddy, jowar, bajra, maize, ragi, tur/arhar, moong, urad, groundnut, soyabean, sunflower, sesamum, niger seed, cotton;
- ❖ Rabi Crops (*total 06*) like wheat, barley, gram, masur/lentil, rapeseed and mustard, and safflower; an
- ❖ Commercial Crops (*total 02*) like jute and copra.

a. MSP for Toria and de-husked coconut is also fixed on the basis of MSPs of rapeseed & mustard and copra respectively.

### **Demand for Legal Guarantee**

- ❖ Farmers have been demanding a legal guarantee for MSP by arguing that without such a price, farmers will become bankrupt and leave farming, which will have serious consequences for our food security, adversely affecting consumers.
- ❖ The demand for a legal guarantee for MSP has two parts:
  1. MSP should be based on the comprehensive cost of production (C2), as determined by the **Commission for Agricultural Costs and Prices (CACP)**, plus 50%, as recommended by the **Swaminathan Commission**.
  2. The 23 crops for which MSP is announced should be legally purchased at or above the MSP price by anyone who **'willingly enters'** the market.

### **Arguments Favouring Legalising MSP**

- ❖ **Agricultural Crisis:** The agricultural sector has been squeezed in many ways over the past 30 years, and there is a need for a legal guarantee for MSP to address this crisis.
- ❖ **Nutrition Security:** As India shifts from food security to nutrition security, a legal guarantee for MSP for 23 crops could be a way to achieve this.
- ❖ **Price Stabilisation:** The government is not expected to buy all the 23 crops. But if at least 5-10% of the produce is purchased, it would be a marginal intervention and stabilise the prices.
- ❖ **Support to Farmers:** The government's price policy is to ensure remunerative prices to farmers by offering to procure their produce at MSP.

### **Arguments Against Legalising MSP**

- ❖ **Implementation Challenges:** While the Centre has fixed MSP for 23 farm commodities, it is implemented mostly for rice and wheat mainly because India has vast storage facilities for these grains.
- ❖ **Limited Reach:** According to the **Shanta Kumar Committee's 2015 report**, only 6% of the farm households sell wheat and rice to the government at MSP rates.
- ❖ **Need for Policy Review:** There is a need for a detailed, thorough review of agricultural trade policies and production and also what will happen to agriculture in the next 20-25 years.

### **Government's Stand**

- ❖ The Union government has repeatedly asserted that a legal guarantee for MSP will not be possible by arguing that MSP is a minimum price that the farmer must get to remain in business.
  - ✓ However, it has not taken any concrete steps towards providing a legal guarantee for MSP.

### **Agriculture and Constitution of India**

- ❖ Agriculture is primarily mentioned in the State List and the Concurrent List of Schedule VII of the Constitution of India.

#### **State List (List II)**

- ❖ Entry 14: Agriculture, including agricultural education and research, protection against pests, and prevention of plant diseases.
- ❖ Entry 28: Markets and Fairs
- ❖ Entry 30: Money-lending and money-lenders; relief of agricultural indebtedness.
- ❖ Entry 45: Land revenue, including the assessment and collection of revenue, the maintenance of land records, survey for revenue purposes, and records of rights, and alienation of revenues
- ❖ Entry 64: Offences against laws with respect to any of the matters in this List.

#### **Concurrent List (List III):**

- ❖ Entry 33: It covers foodstuffs, including edible oilseeds and oils; cattle fodder, including oilcakes and other concentrates; raw cotton, and cottonseed; and raw jute.

## Conclusion

- ❖ The debate around the legality of MSP in India is complex and multifaceted. It involves considerations of **economic policy, agricultural sustainability, and social justice**.
- ❖ While the demand for a legal guarantee for MSP is strong among farmers, the government and policy makers need to consider the broader implications of such a move.

## GENDER PARITY IN GREEN JOBS

**Context:** The article highlights the issue of inadequate representation of women in Green jobs.

### What is a Green Job?

As per International Labour Organization, it is a decent job that contributes to preservation or restoration of the environment. They can be in traditional sectors such as manufacturing and construction or in new segments linked to green energy.

### What is the status of women participation in green jobs market?

- ❖ Despite tremendous increase in India's renewable energy capacity, women comprised only 11% of workers in the solar rooftop sector.
- ❖ The Annual Survey of Industries 2019-20 shows that women workers are mostly concentrated in industries such as apparel, textile, leather, food, and tobacco.

### What are the reasons behind their low participation in the green jobs market?

1. **Gender Stereotypes**-There is a general belief that women are unsuitable for certain technical roles. There are also concern about the safety of women.
2. **Low participation in manufacturing and engineering sector**- In India, Women constitute 42.7% of the total STEM graduates (science, technology, engineering, and mathematics). However, they represent only 30.8% in engineering, manufacturing and construction programmes which are the key sectors for green transition.
3. **Lack of robust data**- There are no periodic gender analysis and gender statistics on green jobs.
4. **Lack of proper training**- A Skill Council for Green Jobs study indicated that 85% of the training for green skills was imparted to men. Due to lack of green skill, their participation is restricted.
5. **Lack of women friendly policies**- There are no dedicated Gender-focused financial policies and products which could cater to the requirements of women entrepreneurs.

### What is the significance of enhanced women participation in green jobs?

1. **Foster gender equality**- It can address the gender biases in the Indian labour market and improve women's labour force participation rates.
2. **Sustainable economy**- It would help in unlocking the benefits of a low-carbon and environmentally sustainable economy.

### What should be the way forward?

1. **Plugging data gap**- There is a need to conduct gender analysis, collecting gender statistics on green jobs through periodic labour force surveys to emphasize women's role in the green transition.
2. **Address structural barriers**-There is a need to address issues like low participation of women in manufacturing and engineering field and lack of adequate skill development training for women.
3. **Women friendly policies**- The government should devise ways to ensure collateral-free lending, financial literacy training to unlock the true potential of women. COP 28's '**Gender-Responsive Just Transitions and Climate Action Partnership**' with a focus on improved data, targeted finance, and skill development is a step in right direction.
4. **Leadership** - There is a need to bring more women into leadership positions to incorporate gender-specific needs in low-carbon economy.
5. **Multi-stake holder participation**- There should be partnerships across government, private sector and other stakeholders to ensure the availability of technology and finance for women entrepreneurs and workers.

Businesses must recognize the centrality of gender justice and ensure equity throughout the process of green transition by mitigating existing barriers.

## LACK OF REGULATIONS & SECURITY BENEFITS FOR GIGS: STUDY

**Context:** A study conducted by the People's Association in Grassroots Action and Movements recently highlighted the plight of **more than 10,000 Indian cab drivers, gig and platform workers.**

### Major Highlights of the Study

- ❖ **Long working hours:** Almost a third of app-based cab drivers work for **over 14 hours a day**, while more than 83% work more than 10 hours and 60% work over 12 hours.
- ❖ **Reflects caste equations:** It noted that social disparities make the situation worse, with **over 60% of the drivers from Scheduled Castes and Tribes** working for over 14 hours a day, while **only 16% from the unreserved category** work such long hours.
- ❖ **Low pay:** The study report says that over 43% of participants in the study earn less than ₹500 a day or ₹15,000 a month, after deducting all their costs.
  - ✓ The study found that 34% of app-based delivery persons earn less than ₹10,000 a month, while 78% of them are spending over 10 hours each day at work.
- ❖ **Demographic trends:** Out of 5302 cab drivers and 5028 delivery persons across eight cities participated in a 50-question survey, 78% of the respondents were in the age group of 21 to 40 years.
- ❖ **Risky business:** Due to the demanding work hours, the study found that drivers are physically exhausted, and exposed to an increased risk of road traffic accidents, especially due to the **'10-minute delivery at the doorstep' policy** of certain e-commerce platforms.
  - ✓ The report said that 86% of delivery persons found such policies **"completely unacceptable"**. The lack of social and job security creates additional stress and leads to potential health issues.
- ❖ **Expenses exceed earnings:** While 72% of the cab drivers said that they face difficulty in managing expenses, 76% of the delivery persons are struggling to make their ends meet.
  - ✓ 68% of cab drivers' responses even show that their overall expenses exceed their earnings, which indicate how a vast number of app-based workers could be in debt-like situations.
- ❖ **Huge deductions:** 35% of the respondents reported the companies are deducting between 31-40% of commission rate per ride, while the officially claimed figure by the companies themselves is 20%.
- ❖ **Customer misbehavior:** Customer behaviour affects a significant majority (72%) of drivers in a negative way, while 68% of delivery persons are reportedly affected by it negatively," the report said.
- ❖ **Inability to take leaves:** It added that 41% of the drivers said they are unable to take even a single day off in a week; 48% of delivery persons too reported their inability to take a weekly off.
- ❖ **Issue of ID deactivation:** A glaring 83% of the drivers reported that the issue of ID blocking affects them negatively, 47% stated that this issue extremely affects them. In the case of delivery persons, this percentage is even higher at 87%.

### Gig Economy

- ❖ The gig economy is about individual workers carrying out tasks for clients through the intermediation of a platform attributing those tasks and taking care of the transfer of payment on a **task-by-task basis**.
- ❖ **Gig workers:** NITI Aayog defines 'gig workers' as those engaged in work outside of the traditional employer-employee arrangement.
  - NITI Aayog's report titled 'India's Booming Gig and Platform Economy' defines a gig worker as
  - ✓ "someone **who engages in income-earning activities outside of a traditional employer-employee relationship, as well as in the informal sector"**.

- ✓ Additionally, it defines those working with platforms such as **Ola, Uber, Dunzo, Swiggy, Zomato** and **Urban Company** as **platform workers**.

### Significance

- ❖ The gig economy is based on **temporary, or freelance jobs**, often involving **connecting with clients or customers through an online platform**.
- ❖ The gig economy can benefit workers, businesses, and consumers by making work more adaptable to the **needs of the moment** and the **demand for flexible lifestyles**.
- ❖ **Time flexibility:** Workers operating in the gig economy are allowed to work any of the hours they desire.
- ❖ **Income flexibility:** It is an increasingly attractive market due to the sheer flexibility that allows individuals to **earn extra income**.
- ❖ **Size of the sector:** As per the report, 47 percent of gig work currently is in **medium-skilled jobs**, 22 percent in **high-skilled**, and about 31 percent in **low-skilled jobs**.
  - ✓ **Drivers and sales persons** accounted for more than 52 percent of the gig workers in 2019-20.
  - ✓ When workers are classified by industries, the report said that 26.6 lakh gig workers were involved in **retail trade** and **sales** in FY20, and about 13 lakh were in the **transportation sector**.
  - ✓ Roughly 6.2 lakh persons were in **manufacturing** and another 6.3 lakh in the **finance and insurance activities**.

### Suggestions/Recommendations

- ❖ **Social security measures:** Authors of the study recommended stronger social security for app-based workers.
  - ✓ Social security measures are required like **paid sick leave, health access and insurance, retirement/pension plans and other contingency benefits**.
- ❖ **Oversight mechanism:** They called on the government to exercise oversight on the fairness of **algorithms** and mechanisms used by platforms to monitor such workers.
- ❖ **Skilling:** It is recommended that skill gaps be bridged by **carrying out assessments periodically** and partnering with platform businesses for onboarding skilled women and persons with disabilities.
  - ✓ It is also suggested to make aggregate data public to enable decision-making.
- ❖ **Women in the gig economy:** Companies should carry out gender sensitization and accessibility awareness programmes for workers and their families, particularly **to promote the rights of women and persons with disabilities**.

### Way Ahead

- ❖ The gig economy is a **growing trend**, with many people attracted to the flexibility and freedom it offers. But an **adequate regulatory mechanism in place** is the need of hour.
- ❖ The gig economy is here to stay, and for many, it offers a desirable work style with **flexibility and autonomy**. But it also comes with challenges like income insecurity and lack of benefits, which needs to be **dealt with collectively by the government, private sector and civil society**.

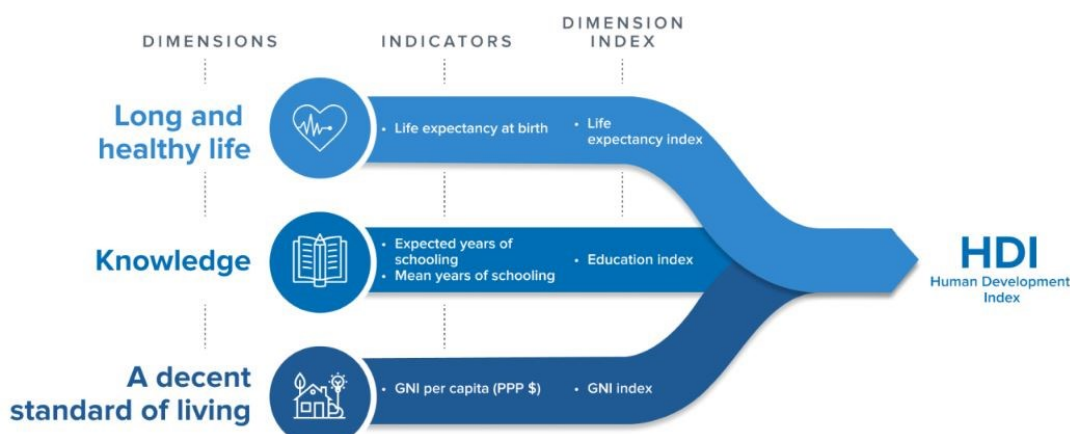
## HUMAN DEVELOPMENT REPORT 2023- 24

**Context:** The United Nations Development Programme has released the **Human Development Report 2023-24**.

### About Human Development Index (HDI)

- ❖ The HDI is a composite index computed based on three parameters – **life expectancy, education, and gross national income (GNI) per capita.**

### HDI Dimensions and Indicators



### Major Findings

- ❖ **Rise in Global Inequalities:** After 20 years of convergence, the gap between the richest and poorest countries has started to widen from 2020.
  - ✓ Rich countries are experiencing record levels of human development, while half of the world's poorest countries remain below their pre-covid level.
- ❖ **SDG Goal:** Before the covid crisis, the world was on track to reach an average “very high” HDI by 2030, coinciding with the deadline for the Sustainable Development Goals (SDGs).
  - ✓ Now it is off track, with every region running below its pre-2019 projections.
- ❖ **India:** India has been ranked 134th out of 193 countries. India's ranking has improved by one position this year.
  - ✓ India has been placed in the **medium human development category.**
  - ✓ India saw **improvements across all HDI indicators** – life expectancy, education, and Gross National Income (GNI) per capita.
  - ✓ India demonstrated **progress in reducing gender inequality**, India's GII value is better than the global and South Asian averages.
  - ✓ India also has **one of the largest gender gaps** in the labour force participation rate—a 47.8 percentage point difference between women (28.3%) and men (76.1%).

### India's Progress in HDI Since 1990

- ❖ India has shown remarkable progress in human development over the years.
  - ❖ Since 1990, life expectancy at birth has risen by 9.1 years; expected years of schooling have increased by 4.6 years, and mean years of schooling have grown by 3.8 years.
  - ❖ India's GNI per capita has grown by approximately 287 percent.
- ❖ **India's Neighbours:** Sri Lanka has been ranked at 78, while China is ranked 75, both categorized under the High Human Development category.
    - ✓ Bhutan stands at 125 and Bangladesh is in the 129th position.
    - ✓ Nepal (146) and Pakistan (164) have been ranked lower than India.
  - ❖ **Top Ranked:** Switzerland has been ranked number one followed by Norway and Iceland.
  - ❖ **Bottom Ranked:** Central African Republic (191), South Sudan (192) and Somalia (193) were at the bottom of the Index.

### Recommendation as per the Report for Improvement in HDI:

- ❖ **Planetary public goods for climate stability** as we confront the unprecedented challenges of the Anthropocene;

- ❖ **Digital global public goods for greater equity** in harnessing new technologies for equitable human development;
- ❖ **New and expanded financial mechanisms**, including a novel track in international cooperation that complements humanitarian assistance and traditional development aid to low-income countries; and
- ❖ **Dialing down political polarization** through new governance approaches focused on enhancing people's voices in deliberation and tackling misinformation.

## POVERTY ESTIMATION IN INDIA

**Context: NITI Aayog B.V.R. Subrahmanyam** recently claimed that less than 5% of Indians now live below the poverty line. He made the claim based on the findings of the **Household Consumption Expenditure Survey (HCES), 2022-23**.

### About

- ❖ The **Household Consumption Expenditure Survey (HCES)** claimed that India's rural poverty level had declined to **7.2% in 2022-23 from 25.7% in 2011-12**, while **urban poverty slipped to 4.6% from 13.7%** over the same period.
- ❖ The HCES is usually conducted by the **National Statistical Office (NSO) every 5 years**. It is designed to collect information on the consumption of goods and services by households.
- ❖ **At a national level**, the report reckoned that the **poverty rate in India could now be in the range of 4% to 5%**, with a caveat that these numbers could undergo minor revisions once the Census to count the population that was due in 2021, is completed and the rural-urban population share is published.
- ❖ **Other Estimates of Poverty in India**
- ❖ **'Multidimensional Poverty in India since 2005-06: A Discussion Paper': NITI Ayog:**
- ❖ Multidimensional poverty in India **declined from 29.17% in 2013-14 to 11.28% in 2022-23**.
- ❖ As many as **24.82 crore people moved out of multidimensional poverty in nine years to 2022-23**, with Uttar Pradesh, Bihar and Madhya Pradesh registering the largest decline.

### Multidimensional Poverty Index 2023:

- ❖ The MPI 2023 estimates show a **near-halving of India's national MPI value and a decline from 24.85% to 14.96% between 2015-16 and 2019-21**.
- ❖ This reduction of 9.89 percentage points implies that about **135.5 million people have exited poverty between 2015-16 and 2019-21**.
- ❖ Besides, **the intensity of poverty**, which measures the average deprivation among the people living in multidimensional poverty, **reduced from 47.14% to 44.39%**.
- ❖ **Poverty in India**
- ❖ Poverty entails **more than the lack of income and productive resources** to ensure sustainable livelihoods. **Its manifestations include hunger and malnutrition, limited access to education and other basic services**, social discrimination and exclusion as well as the lack of participation in decision-making.
- ❖ Poverty in India **remains a complex challenge** despite significant reductions in recent decades.

### Current Issues

- ❖ **Debates on Definition and Measurement:** Different poverty lines (income levels considered poor) and data sources lead to varying estimates.
- ❖ The **World Bank, using the \$2.15 per day benchmark** (PPP – Purchasing Power Parity), estimates an **11.9% poverty rate for India**.
- ❖ The Indian government claims a **lower national poverty, with figures below 5%** of the population below the poverty line .



- ❖ **Government Data:** The Indian government uses its own poverty indicators, which tends to show lower poverty rates compared to international benchmarks.
- ❖ **Uneven Progress:** Poverty reduction has been faster in rural areas compared to urban areas.

### Causes of Poverty

- ❖ **Limited Livelihood Opportunities:** Lack of access to good jobs, especially in rural areas, keeps people trapped in poverty.
- ❖ **Social Inequality:** Caste discrimination, gender bias, and lack of access to education disproportionately affect marginalized communities.
- ❖ **Low Productivity in Agriculture:** The level of productivity in agriculture is low due to subdivided and fragmented holdings, lack of capital, use of traditional methods of cultivation, illiteracy etc.
- ❖ **Inequality in the Distribution of Income and Assets:** The poor mainly consists of unskilled labor, which typically does not command a high enough level of wage income.
- ❖ The benefits of the growth have been concentrated and have not **“trickled down” sufficiently** to ensure improved consumption among the lower income groups.
- ❖ **Lack of Access to Social Services:** The lack of access to social services such as health and education compound the problems arising from inequality in the ownership of physical and human assets
- ❖ **Lack of access to Institutional Credit:** The banks and other financial institutions are biased in the provision of loans to the poor for the fear of default in the repayment of loans.
- ❖ **Lack of Productive Employment :** The magnitude of poverty is directly linked to the unemployment situation. The present employment conditions don't permit a reasonable level of living causing poverty.
- ❖ **Caste system:** Caste system in India has always been responsible for rural poverty. The subordination of the low caste people by the high caste people caused the poverty of the former
- ❖ **Social customs:** The rural people generally spend a large percentage of annual earnings on social ceremonies like marriage, death feast etc. and borrow largely to meet these requirements. As a result, they remain in debt and poverty.
- ❖ **Vicious Circle of Poverty:** Low level of saving reduces the scope for investment; low level of investment yields low income and thus the circle of poverty goes on indefinitely.

### Poverty Line Estimation in India

- ❖ **Tendulkar committee (2009):** Poverty line in the Suresh Tendulkar methodology was expenditure of **₹33 a day in urban areas and ₹27 a day in rural areas.**
- ❖ Thus, India's poors as percentage of total population in **2011-12** as per the Tendulkar committee was **21.9.**
- ❖ **Rangarajan committee(2014):** In the Rangarajan methodology, it was **₹47 a day in urban areas and ₹30 a day in rural areas.**
- ❖ Thus, India's poor population as percentage of Indian population in 2011-12 was **29.5**, as per Rangarajan committee.
- ❖ **Current poverty line calculation by NITI Aayog:** A new approach has evolved by the NITI Aayog to incorporate multiple dimensions and non-income factors in the form of **Multidimensional Poverty Index**, based on **National Family Health Surveys(NFHS) results.**
- ❖ At the core of the MPI is the **Alkire-Foster (AF) methodology**, a globally accepted general framework for measuring multidimensional poverty, which captures overlapping deprivations in health, education, and living standards.
- ❖ **International Poverty Line:** The **World Bank** defines a person as extremely poor if she is living on **less than \$2.15 per day**, which is adjusted for inflation as well as price differences between countries.

### Suggestions/Measures

- ❖ **Address interlinkages:** Inequalities of income, education, and opportunity are all interconnected and must be addressed together.

- ❖ **Reducing inequalities of opportunity** and of incomes among individuals, populations, and regions can foster social cohesion and boost general well-being.
- ❖ **Jobs and employment** are the surest way to reduce poverty and inequality.
- ❖ **Poverty eradication must be mainstreamed** into the national policies and actions in accordance with the internationally agreed development goals forming part of the broad United Nations Development Agenda.
- ❖ **Education and health:** It is essential that the government should provide education and health services free of cost for the deserving citizens and those from the socially oppressed classes.
- ❖ **Government Initiatives to Reduce Poverty in India**
- ❖ **Mahatma Gandhi National Rural Employment Guarantee Work (MGNREGA):** It provides wage employment while also focusing on strengthening natural resource management through works that address causes of chronic poverty.
- ❖ **Flagship programmes like the Poshan Abhiyan** and Anaemia Mukh Bharat have contributed to reduced deprivations in health.
- ❖ **Initiatives such as Swachh Bharat Mission (SBM) and Jal Jeevan Mission (JJM)** have improved sanitation across the country.
- ❖ The provision of subsidized cooking fuel through the **Pradhan Mantri Ujjwala Yojana (PMUY)** has positively transformed lives in rural areas.
- ❖ Initiatives like **Saubhagya, Pradhan Mantri Awas Yojana (PMAY), Pradhan Mantri Jan Dhan Yojana (PMJDY)**, and Samagra Shiksha have also played a major role in significantly reducing multidimensional poverty in the country.

### Way Ahead

- ❖ India has made progress in eliminating extreme poverty but still there is a long way to go ahead, as seen in the World Bank’s recent claim that **74% Indians still can’t afford a nutritious diet.**
- ❖ Further, to get the real picture of poverty in India **revision of the poverty line** as per changing socio-economic realities is needed.

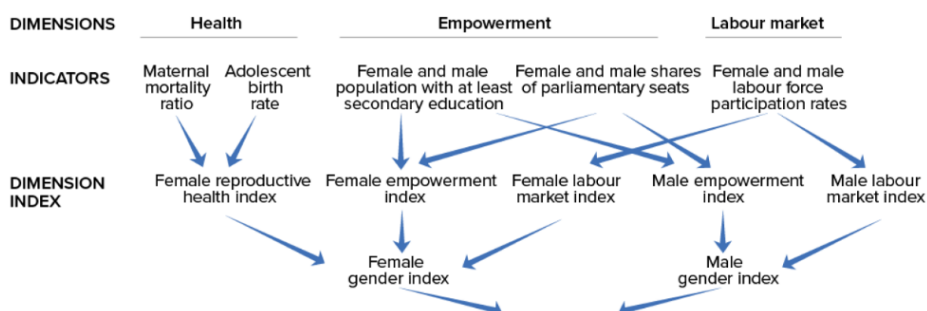
## GENDER INEQUALITY INDEX 2022

**Context:** The Gender Inequality Index 2022 has been released by UNDP in their Human Development Report 2023/2024.

### About the Index

- ❖ GII is a composite metric of gender inequality using three dimensions:
- ❖ reproductive health, empowerment and the labour market.
- ❖ A low GII value indicates low inequality between women and men, and vice-versa.

### Dimensions and Indicators



### Findings

- ❖ Denmark topped the index followed by Norway, Switzerland and Sweden.
- ❖ India has registered a significant jump of 14 ranks in Gender Inequality Index 2022.
- ❖ It ranked 108 out of 193 countries with a score of 0.437 in GII 2022.
- ❖ In 2022, India saw improvements across all HDI indicators — life expectancy, education, and gross national income (GNI) per capita and life expectancy rose from 67.2 to 67.7 years, expected years of schooling reached 12.6, mean years of schooling increased to 6.57 and GNI per capita saw an increase from USD 6,542 to USD 6,951.

### India's Progressive Improvement

- ❖ Over the last 10 years, India's rank in GII has become consistently better, indicating progressive improvement in achieving gender equality in the country.
- ❖ India's adolescent birth rate in 2022 was 16.3 (births per 1,000 women ages 15-19), an improvement from 17.1 in 2021.
- ❖ However, the country still has one of the largest gender gaps in its labour force participation rate — a 47.8% difference between women (28.3 %) and men (76.1 %).

### Major Initiatives Helping India in Improvement

- ❖ **Code on Social Security, 2020:** Provisions for women's social security across various aspects.
- ❖ **Mission Shakti:** Self-help mission for empowering women through promotion of Women Self Help Groups (WSHG) to take up various socio-economic activities.
- ❖ **Others:** Beti Bachao Beti Padhao (BBBP), Pradhan Mantri Matru Vandana Yojana, Ujjwala Yojana, reservations and legislative policies etc.

## FINANCIAL INCLUSION OF WOMEN

**Context:** It is observed that the gender gap in access to mobile phones has an impact on financial inclusion.

### About Financial Inclusion

- ❖ Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs.
  - ✓ The Reserve Bank of India, releasing the National Strategy for Financial Inclusion (2019-2024), defined '**financial inclusion**' as "the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost.
- ❖ **Financial inclusion** has been identified as an **enabler for 7 of the 17 Sustainable Development Goals**.

### Importance Financial Inclusion for Women

- ❖ Financial inclusion is critical to achieving the **economic empowerment** of women—one of the targets under the **fifth Sustainable Development Goal** on gender equality.
- ❖ Access to financial services gives opportunities for **generating income, accumulating assets, and participating more fully in economic activities**, thereby promoting social and economic empowerment.
- ❖ Financial inclusion has a **positive impact on women's control** over household resources by increasing their savings.
- ❖ It will result in direct improvements in outcomes of health, education, and employment.
  - ✓ In turn, such progress helps achieve collective goals of eradicating poverty, promoting inclusive growth, and reducing inequality
- ❖ Additionally, women play a crucial role in promoting entrepreneurship by channeling their savings into starting or expanding small businesses.
- ❖ The adoption of digital payments across the world was boosted by COVID-19 and digital payments, in turn, have widened financial inclusion
- ❖ The percentage of women who have a bank or savings account that they themselves use has increased from 53 percent in NFHS-4 (2015-16) to 79 percent in NFHS-5.

## Challenges

- ❖ Although the country's programmes promoting financial inclusion have increased the percentage of women having access to a bank account, **wide gaps remain in account use, and access to savings and credit.**
- ❖ Women continue to face barriers to **accessing financial services** for various reasons: they are more likely to **lack proof of identity** or a mobile phone, and live far from a bank branch.
- ❖ The barriers that women face are gendered: **restrictive social norms**, mobility constraints, lack of identification, limited financial literacy, insufficient assets for collateral, and low levels of digital literacy
- ❖ **COVID-19 and the gendered digital divide** : the pandemic increased the need for contactless financial products and services, accelerating the shift to digital finance in many economies.
  - ✓ However, the tools and skills required to use digital financial products and services are not available to all, which has brought attention to the digital divide that affects women in particular.

## Initiatives

- ❖ **Pradhan Mantri Jan Dhan Yojana (PMJDY) :** It aims to promote financial inclusion in every household in the country.
  - ✓ PMJDY offers an overdraft facility of INR 10,000 to the woman of the household for operating the savings account satisfactorily, without asking for security or how she will spend the money.
- ❖ **Direct Benefits Transfer (DBT) :** A key policy driver in women's uptake and use of financial services in India has been the Direct Benefits Transfer (DBT) initiative for women account holders.
  - ✓ The DBT also brings benefits to the government: it eliminates intermediaries, brings in transparency, and lowers the costs of distributing social security
  - ✓ DBT covers wages for the Mahatma Gandhi National Rural Employment Guarantee Act, LPG subsidy, and free food grains under the Public Distribution System.
- ❖ The **Pradhan Mantri Mudra Yojana** targets the financial inclusion of women by providing collateral-free loans up to INR 1 million for small and micro enterprises.
- ❖ **The Unified Payments Interface (UPI)** system has also revolutionised digital payments, making it easier for women to engage in financial transactions and investments.

## Suggestions for Women's Financial Inclusion

- ❖ **Appoint more women Business Correspondents:** They are retail agents that provide doorstep banking services in rural areas.
  - ✓ Introduced in 2006, BCs have emerged as the predominant delivery model in the country for financial services
- ❖ **Promote women's access to, and literacy in digital tools**
- ❖ **Deepen convergence with self-help groups.** In India, self-help groups (SHGs) have historically played an important role in the financial inclusion of women through the SHG-Bank Linkage Programme.
  - ✓ SHGs can also be tapped to run financial literacy centres for women.
- ❖ **Collect gender-disaggregated data and develop strategies to form women-centric approaches.**
- ❖ Promote digital credit for medium and small businesses.

## Conclusion

- ❖ Financial inclusion is essential for economic growth and sustainable development; for women, it is a pathway to **economic and social empowerment.**
- ❖ The existing challenges must be addressed through a women-centric approach to financial inclusion that prioritises equal access for women to the full range of financial services available to men.
  - ✓ This will allow them the same opportunities as men to participate fully in economic activity.
- ❖ Ensuring the optimal use of women's savings in India requires a focus on efficient mobilisation and allocation, leveraging financial markets and institutions.
- ❖ Government policies with a gender-sensitive approach are pivotal in encouraging women's participation in productive investments.

- ❖ India's digital infrastructure is crucial in enabling women's savings to be channelled into productive capital and investments.

## ECONOMIC INEQUALITY IN INDIA

**Context: Inequality is worsening in India** with the **share of top 1%** in total income at new high as per the paper released by World Inequality Lab.

### Major Findings

- ❖ **Concentration of Wealth:** Wealth is **highly concentrated** even within the top 1 percent.
  - ✓ In 2022-23, the **top 1 percent wealth share was 39.5 percent**, 29 percentage points went just to the top 0.1 percent, 22 percentage points to just the top 0.01 percent and 16 percentage points to just the top 0.001 percent.
- ❖ **Rise over the Years:** In 1961, bottom 50 percent and top 1 per cent shares were identical; by 2022-23, the **top 1 percent share was more than 5 times larger**.
- ❖ **Lack of Data:** The quality of economic data in India is notably poor and has seen a decline recently. It is therefore likely that these new estimates represent a lower bound to actual inequality levels.

### Reasons for Economic Inequality in India

- ❖ **Historical Factors:** India's history, including colonization and feudalism, has led to the accumulation of wealth in the hands of certain groups.
  - ✓ These historical inequalities have persisted over time, influencing wealth distribution patterns.
- ❖ **Economic Policies:** Economic policies, including liberalization and privatization measures implemented since the 1990s, have spurred economic growth in certain sectors, benefitting those with access to capital and resources.
  - ✓ However, these policies have also widened income and wealth inequalities, with the gains of economic growth disproportionately accruing to the wealthy.
- ❖ **Urban-Rural Divide:** There exists a significant gap in development between urban and rural areas.
  - ✓ Urban centers tend to attract more investment and offer better job opportunities, leading to the concentration of wealth in these regions.
- ❖ **Access to Education and Opportunities:** Disparities in access to education persist, particularly among marginalized communities, exacerbating wealth inequality.
- ❖ **Informal Economy:** A significant portion of India's workforce is employed in the informal sector, where workers often lack job security, social protections, and access to formal financial services.
  - ✓ The informal economy perpetuates economic vulnerability and contributes to income disparities.
- ❖ **Globalization and Market Forces:** The benefits of globalization have not been evenly distributed, leading to the concentration of wealth among a select group of individuals and corporations that are well-positioned to capitalize on global market trends.

### Suggestions As per the Report

- ❖ The paper finds suggestive evidence that the **Indian income tax system** might be **regressive** when viewed from the lens of net wealth.
  - ✓ A **restructuring of the tax code** to account for both **income and wealth**, and broad-based public investments in health, education and nutrition are needed to enable the average Indian, and not just the elites, to meaningfully benefit from the ongoing wave of globalisation.
- ❖ A **"super tax" of 2 percent** on the net wealth of the **167 wealthiest families** in 2022-23 would yield **0.5 percent of national income** in revenues and create valuable fiscal space to facilitate such investments.

- ❖ Addressing wealth disparity in India requires **comprehensive policy measures** aimed at promoting **inclusive economic growth**, improving access to education and opportunities, addressing social discrimination, combating corruption, and implementing **progressive taxation and wealth redistribution policies**.

## INTER-MINISTERIAL JOINT WORKSHOP ON BLUE ECONOMY

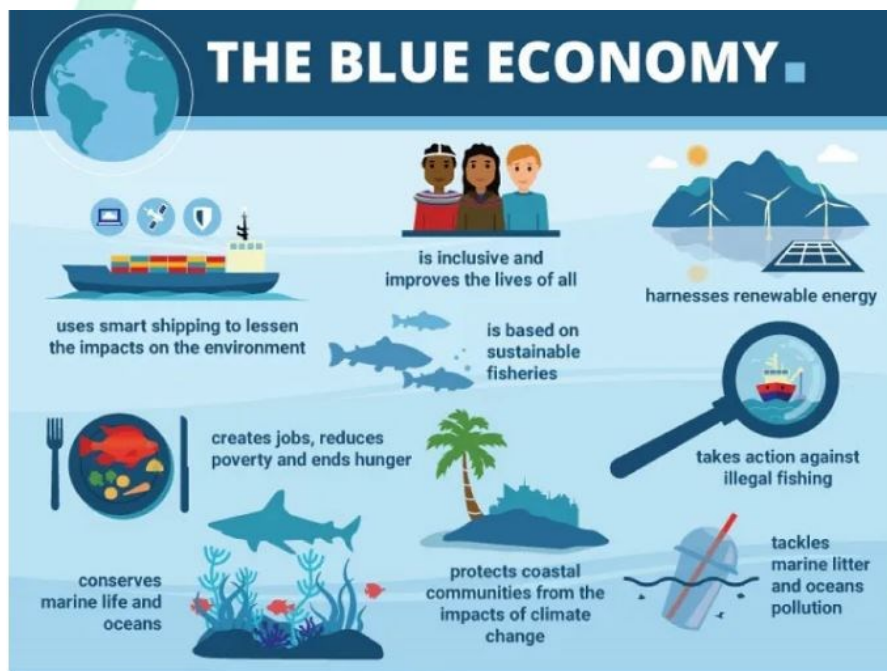
**Context:** The Ministry of Earth Sciences hosted the **Inter-Ministerial Joint Workshop on Blue Economy**.

### About

- ❖ MoES has engaged with the **World Bank** as a knowledge partner to undertake a **technical study** and **prepare a report titled 'India's Blue Economy: Pathways for resource-efficient, inclusive and resilient growth in India'**.
- ❖ The report is expected to cover the areas related to global best practices in Blue Economy implementation, ocean accounting framework, institutional strengthening and innovative finance mechanisms towards **implementing the Blue Economy Policy framework**.

### What is the Blue Economy?

- ❖ It is referred as the **sustainable use of ocean resources** for economic growth, improved livelihoods, and jobs while preserving the health of the ocean ecosystem.



### India's Blue Economy

- ❖ India has a **7,517 km long coastline and Exclusive Economic Zone (EEZ)** of over two million square km is rich in living and non-living resources.
- ❖ India's blue economy accounts for **roughly 4% of the GDP** and is estimated to increase once the mechanism is improved.
- ❖ The coastal economy also sustains over 4 million fisherfolk and other coastal communities.
- ❖ Four primary industries in India can fuel its blue economy; **fishing, aquaculture, ports, and shipping**.

### Significance of the Blue Economy

- ❖ **Economic Growth:** The Blue Economy presents significant opportunities for economic growth through sectors such as fisheries, aquaculture, tourism, maritime transport, renewable energy, and biotechnology.

- ❖ **Resource Utilization:** It promotes the sustainable utilization of marine resources, including fish stocks, minerals, and energy sources, ensuring their availability for current and future generations.
- ❖ **Renewable Energy:** The Blue Economy encourages the development of renewable energy sources such as offshore wind, wave, and tidal energy, reducing dependence on fossil fuels and mitigating climate change.
- ❖ **Tourism:** Coastal and marine tourism is a key component of the Blue Economy, generating revenue, employment, and supporting local economies in coastal regions.
- ❖ **Climate Change Mitigation:** Healthy oceans play a crucial role in regulating the Earth's climate.
  - ✓ The Blue Economy promotes conservation efforts and sustainable practices that help mitigate the impacts of climate change, such as preserving coastal ecosystems and reducing carbon emissions.
- ❖ **Biodiversity Conservation:** By promoting sustainable practices and responsible management of marine resources, the Blue Economy contributes to the conservation of marine biodiversity and the protection of endangered species and habitats.

### Challenges

- ❖ **Pollution and environmental degradation:** India's coastal areas face significant pollution from various sources, including industrial discharge, untreated sewage, agricultural runoff, and plastic waste.
  - ✓ Pollution harms marine ecosystems, affects biodiversity, and undermines the sustainability of fisheries and other marine industries.
- ❖ **Overexploitation of marine resources:** Illegal, unreported, and unregulated (IUU) fishing exacerbates the problem, leading to depletion of fish stocks and loss of livelihoods for coastal communities.
- ❖ **Climate change impacts:** Rising sea levels, ocean acidification, and changes in ocean temperature and currents due to climate change affect fisheries, aquaculture, coastal infrastructure, and biodiversity.
- ❖ **Maritime security challenges:** India's maritime security is threatened by various factors, including piracy, illegal trafficking, maritime terrorism, and territorial disputes.
- ❖ **Limited institutional capacity and infrastructure:** Developing and managing the blue economy requires robust institutional frameworks, governance mechanisms, and infrastructure.
  - ✓ However, India faces challenges related to capacity constraints, inadequate funding, bureaucratic inefficiencies, and regulatory gaps, hindering effective management and sustainable development of marine resources.

### Steps Taken by Government of India to Promote Blue Economy

- ❖ **National Policy Framework:** Government has formulated a National Policy Framework for the Blue Economy, which provides a strategic roadmap for sustainable development and management of marine resources.
  - ✓ The framework aims to integrate various sectors such as fisheries, aquaculture, shipping, tourism, and renewable energy to promote holistic growth.
- ❖ **Sagarmala Programme:** The Sagarmala Programme is a flagship initiative aimed at modernizing India's ports, enhancing port connectivity, and promoting port-led development.
  - ✓ It focuses on optimizing logistics efficiency, promoting coastal shipping, and developing coastal economic zones to stimulate economic growth and create employment opportunities.
- ❖ **National Marine Fisheries Action Plan (NMFAP):** The plan includes measures to improve fishery resources assessment, enhance infrastructure and technology in the fisheries sector, and promote aquaculture development.
- ❖ **Blue Economy Cell:** The Ministry of Earth Sciences has established a dedicated Blue Economy Cell to coordinate research, policy formulation, and implementation of Blue Economy initiatives.

- ❖ **Integrated Coastal Zone Management (ICZM):** The government has implemented the Integrated Coastal Zone Management Program to promote sustainable development and conservation of coastal ecosystems.
- ❖ **Marine Spatial Planning (MSP):** India has initiated efforts to develop Marine Spatial Planning frameworks to ensure efficient and sustainable use of marine space.

### Way Ahead

- ❖ The Blue Economy in India is poised for significant growth in the next few years.
- ❖ The Blue Economy Mission undertaken by the government can lead to the sector becoming the next economic multiplier, depending on the execution of the policies that have been decided.
- ❖ The sector is the sixth dimension of the government's 'Vision of New India by 2030'; with the Blue Economy policies aiming for long-term economic advantages in order to achieve the greater goals of growth, job creation, equity, and environmental protection.

## SCOPE OF SEMICONDUCTORS INDUSTRY

**Context:** It has been argued that India will become a semiconductor manufacturing hub providing vast employment opportunities.

### About Semiconductors

- ❖ A semiconductor is a material product usually composed of **silicon**.
- ❖ It represents a distinct class of materials that possess some of the **electrical properties of both conductors and insulators**.
- ❖ It can be used to control the flow of electric currents, and with exquisite precision.
- ❖ Each step-in **semiconductor fabrication** demands ultra-high precision and harnesses a blend of diverse scientific principles.
  - ✓ For example, to make the most advanced transistors, the **photolithography process requires** a light source emitting electromagnetic radiation at a wavelength of 13.5 nm.

### Major players

- ❖ **Dutch company ASML** is the sole provider of **photolithography machines** for cutting-edge semiconductor technology worldwide.
- ❖ The **American firms** dominate the software tools the engineers use to design circuits, while the silicon wafer sector is led by **Japan's Shin Etsu**.
- ❖ The market for the **actual task of fabrication is led by Taiwan's TSMC**, with fabrication tools provided by Applied Materials and Lam Research, both headquartered in the U.S.
- ❖ The majority of **intellectual property rights** are held by **British company Arm**.
- ❖ The U.S. also imposed sanctions on Chinese tech companies, including bans on the acquisition of cutting-edge ASML equipment and high-end design software, for the same reason.
  - ✓ In response, China has intensified efforts to bolster its domestic semiconductor production capabilities to meet local demand.

### Status of India

- ❖ India boasts a leading role in chip design centred in Bengaluru.
- ❖ However, most of the intellectual property rights required to execute these designs are retained either by parent companies or by Arm, relegating India to being a mere user of their products.

### Benefits

- ❖ **Computing:** The semiconductor industry produces microprocessors and memory chips, which are the primary components in computers, servers, and data centers. These devices are used in various industries, from finance and healthcare to manufacturing and logistics.



- ❖ **Communications:** Semiconductors are used to produce cell phones, satellite systems, and other communication devices. They are also used to create wireless communication systems, network equipment, and other hardware for data transmission.
- ❖ **Energy:** Semiconductors are used in the production of solar cells and other renewable energy systems. Power management applications also use semiconductors, including voltage regulators and power supplies.
- ❖ **Automotive:** Automotive electronics also use semiconductors, including engine control units, sensors, and safety systems. They are also used in electric vehicles and autonomous vehicles.
- ❖ **Healthcare:** Medical imaging, monitoring, and diagnostic equipment, as well as medical implants and devices, use semiconductors.
- ❖ Owing to their role in sectors like **defence and automotives**, semiconductors have also emerged as a focal point of geopolitical interest, with nations vying to establish semiconductor fabrication facilities within their borders and drawing industry leaders in with a plethora of incentives.

### Challenge and Issues

- ❖ The semiconductor industry faces the challenges and opportunities of increased product demand in the immediate future.
- ❖ The growth of artificial intelligence (AI) and the Internet of Things (IoT) and the ongoing demands from the smartphone sector and other high-tech industries will place stress on the **semiconductor supply chain**.
- ❖ The challenge will be further complicated by **ongoing international trade disputes**, which may drive up the cost of semiconductor materials and interfere with global collaboration within the industry.
- ❖ **India also currently lacks in original research** in semiconductor design, where the future of the chip is decided.

### Recent steps of Government

- ❖ The Government of India has launched the India **Semiconductor Mission** to develop a comprehensive semiconductor ecosystem, aiming to position India at the forefront of the global semiconductor industry and bolster youth employment prospects.
- ❖ The Union Cabinet recently approved setting up **three semiconductor-making units**, entailing an investment of Rs 1.26 lakh crore, as part of an attempt to cut India's dependence on imports to meet the requirements of chips
- ❖ Several initiatives have been launched to promote semiconductor production, including the **Production Linked Incentive (PLI)** scheme for the electronics sector.
- ❖ Additionally, the government has introduced the **Design Linked Incentive (DLI) and other schemes such as Chips to Startup (C2S)** and Scheme for Promotion of Electronic Components and Semiconductors (SPECS) to support the industry.
- ❖ the government has launched the "**Semicon India program**" to address the global chip shortage by encouraging manufacturers to establish their semiconductor industry setups

### Conclusion

- ❖ Setting up semiconductor fabrication units or fabs requires significant investments and expertise.
- ❖ India is seeking a collaborative approach, building partnerships with like-minded nations to facilitate sustainable growth in the industry.
- ❖ India's talent pool is unparalleled, and the country is currently at a crucial point where manufacturing can grow rapidly and efficiently.
- ❖ India has the intellectual capacity, determination, and capability to emerge as a leading global research and development hub.
- ❖ It remains focused on its objective of strengthening the semiconductor industry, which, in turn, will stimulate the growth of the country's expanding electronics manufacturing and innovation ecosystem.

## EMPLOYMENT SCENARIO IN INDIA

**Context:** Recently, the **International Labour Organisation (ILO)** and the **Institute of Human Development (IHD)** together released the **India Employment Report for 2024**.

### **Key Findings of the India Employment Report (2024):**

- ❖ **Youth Unemployment:** India's youth account for almost 83% of the unemployed workforce.
  - ✓ The share of youngsters with secondary or higher education in the total unemployed has almost doubled from 35.2% in 2000 to 65.7% in 2022.
- ❖ **Labour Market Indicators:** The key labour market indicators such as the Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR), and the Unemployment Rate (UR) showed a long-term deterioration between 2000 and 2018.
  - ✓ However, these indicators witnessed an improvement after 2019.
- ❖ **Employment Conditions:** Despite the improvements in labour market indicators, the employment conditions in India remain poor.
- ❖ The slow transition to non-farm employment has reversed, and women largely account for the increase in self-employment and unpaid family work.
- ❖ Almost 90% of workers remain engaged in informal work, while the share of regular work, which steadily increased after 2000, declined after 2018.
- ❖ There are widespread livelihood insecurities, with only a small percentage being covered with social protection measures.
- ❖ **Skills Gap:** The report noted that India's large young workforce doesn't appear to have the skills to deliver — with 75% of youth unable to send emails with attachments, 60% unable to copy and paste files, and 90% unable to put a mathematical formula into a spreadsheet.
- ❖ **Job Market:** India's job market saw a 2% Month on Month (MoM) decline in Nov 2023, with an overall 10% Year on Year (YoY) drop.
  - ✓ Despite this, the Public Sector Undertakings (PSU) sector is expected to bridge the employment gap.
- ❖ **Widening Gender Gap:** The lack of quality employment opportunities is reflected in the high level of joblessness among young people, especially among those who have achieved higher education.
  - ✓ Many highly educated young people are unwilling to take on low-paying, insecure jobs that are currently available and would rather wait in the hopes of securing better employment in the future.

### **Policy Areas for Action Highlighted in Report:**

- ❖ **Promoting Job Creation:** The report emphasises the need for policies that foster job creation to absorb the large number of youths joining the labour force annually.
- ❖ **Improving Employment Quality:** The quality of employment in India remains poor, with a large proportion of workers engaged in informal work.
  - ✓ The report calls for measures to improve employment conditions and provide workers with better job security and benefits.
- ❖ **Addressing Labour Market Inequalities:** The report highlights the need to address persistent inequalities in the labour market, such as those based on gender, caste, and region.
- ❖ **Strengthening Skills and Active Labour Market Policies:** The report notes that a large proportion of India's youth lack the necessary skills for employment.
  - ✓ It calls for stronger skills development initiatives and active labour market policies to enhance the employability of the youth.

- ❖ **Bridging the Knowledge Deficits on Labour Market Patterns and Youth Employment:** The report underscores the need for more research and data to understand labour market trends and the specific challenges faced by young people in the labour market. **Related Government Initiatives To Boost Employment in India:**
- ❖ **Atmanirbhar Bharat Rojgar Yojana (ABRY):** Launched as part of the Atmanirbhar Bharat package 3.0, this scheme incentivizes employers for creating new employment along with social security benefits and restoration of loss of employment during the Covid-19 pandemic.
- ❖ **Pradhan Mantri Rojgar Protsahan Yojana (PMRPY):** This scheme was launched to incentivize employers for the creation of new employment.
- ❖ **National Career Service (NCS) Project:** This project provides a variety of career-related services like job matching, career counselling, vocational guidance, information on skill development courses, apprenticeships, internships, etc.
- ❖ **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA):** This act provides at least 100 days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work.
- ❖ **Pradhan Mantri Garib Kalyan Rojgar Abhiyaan (PMGKRA):** This initiative was launched to boost employment and livelihood opportunities for returnee migrant workers and similarly affected persons in rural areas.
- ❖ **Pradhan Mantri Mudra Yojana (PMMY):** This scheme facilitates self-employment by providing collateral-free loans up to Rs. 10 lakh to micro/small business enterprises and individuals.
- ❖ **Garib Kalyan Rojgar Abhiyaan (GKRA):** This initiative was launched to provide immediate employment and livelihood opportunities to the distressed and to saturate the villages with public infrastructure and creation of livelihood assets.
- ❖ **PM GatiShakti:** This is a transformative approach for economic growth and sustainable development, driven by seven engines, namely, Roads, Railways, Airports, Ports, Mass Transport, Waterways, and Logistics Infrastructure.

#### **Conclusion:**

- ❖ The employment situation in India is grim, with high unemployment rates, lack of skills, and gender disparities. The government initiatives such as Make in India, Start-up India, Digital India, Smart City Mission, Atal Mission for Rejuvenation and Urban Transformation, Housing for All, Infrastructure Development and Industrial Corridors are also oriented towards generating employment opportunities.
- ❖ However, there is a need for more robust policies and initiatives to improve the employment situation in the country.

CivilsTap Hlmachal

## SCIENCE AND TECHNOLOGY

### SETTING UP THREE NEW SEMICONDUCTORS PLANTS IN INDIA

**Context:** The government approved proposals to set up three semiconductor units in **Gujarat and Assam** with an estimated investment of **Rs 1.26 lakh crore**.

#### Proposed Semiconductors Plants

- ❖ A semiconductor fabrication plant will be set up by Tata Electronics and Taiwan's Powerchip Semiconductor Manufacturing Corp. (PSMC) in Gujarat's Dholera.
- ❖ The Tata Group will also set up a chip assembly plant in **Morigaon, Assam** at a cost of Rs 27,000 crore.
- ❖ CG Power and Japan's Renesas will also set up a semiconductor plant in Gujarat's Sanand at an estimated cost of Rs 7,600 crore.

#### What is a Semiconductor?

- ❖ Semiconductors also referred to as 'chips' are highly complex products to design and manufacture, providing the essential functionality for electronic devices to process, store and transmit data.
- ❖ The chip comprises interconnections of **transistors, diodes, capacitors and resistors**, layered on a wafer sheet of silicon.

#### Global Scenario in Chip Manufacturing

- ❖ About **70%** of the current global manufacturing capacity is confined to **South Korea, Taiwan and China**, with **the US and Japan** making up for much of the rest.
- ❖ Taiwan and South Korea make up about 80% of the global foundry base for chips.
- ❖ Only one company, the Netherlands-based ASML, produces EUV (extreme ultraviolet lithography) devices, without which it is not possible to make an advanced chip.

#### Challenges

- ❖ **India's close allies**, like the US and EU, also sense the semiconductor opportunity and have rolled out more lucrative incentive schemes than India.
- ❖ **Talent pool:** While India is the biggest back office for design engineers of all major chip companies, skilled talent that can work on factory floors of a fabrication plant is still hard to come by.
- ❖ **Research and Development:** India currently lacks original research in semiconductor design, where the future of the chip is decided.
- ❖ **Power supply:** Besides, an uninterrupted supply of power is central to the process, with just seconds of fluctuations or spikes causing millions in losses.
- ❖ **Water intensive:** Chip-making also requires gallons of ultrapure water in a single day. This requirement could be a task for the government to provide to factories, compounded also by the drought conditions which often prevail in large parts of the country.

#### Significance of the Project

- ❖ **Job Creation:** The semiconductor industry is highly labor-intensive, requiring skilled engineers and technicians. Semiconductor manufacturing facilities in India will create many direct and indirect employment opportunities.
- ❖ **Reduced Dependence on Imports:** India currently relies on imported semiconductor chips for various electronic devices. Establishing a domestic semiconductor industry will enhance the country's self-reliance and resilience in times of geopolitical tensions or disruptions in global supply chains.
- ❖ **Export Opportunities:** With a competitive semiconductor industry, India can export chips and related products to other countries, generating revenue and improving its trade balance.

- ❖ **Strategic Importance:** Semiconductor chips are critical components in various strategic sectors such as defense, aerospace, and telecommunications. Having a domestic semiconductor industry ensures greater control over the supply chain and reduces vulnerabilities to disruptions or external pressures.

### India's Initiatives for Semiconductor Industry

- ✓ **India Semiconductor Mission:** It has been set up as an Independent Business Division within Digital India Corporation having administrative and financial autonomy to formulate and drive India's long-term strategies for developing semiconductors and display manufacturing facilities and semiconductor design ecosystem.
- ✓ **Production Linked Incentive scheme:** Incentives are being provided for semiconductor design and packaging.
- ✓ **QUAD Semiconductor Supply Chain Initiatives:** To assess the capacity, pinpoint vulnerabilities, and enhance supply chain security for semiconductor and its critical components.

### Way Ahead

- ❖ By establishing a semiconductor industry, India can increase its influence in the global technology landscape.

India can also attract foreign investment, foster innovation, and stimulate other sectors such as electronics, telecommunications, and information technology. A robust industry will significantly contribute to India's GDP growth.

## INDIGENOUS PROTOTYPE FAST BREEDER REACTOR (PFBR)

**Context:** Prime Minister witnessed the initiation of the core loading of **India's indigenous 500 Mwe Prototype Fast Breeder Reactor (PFBR)** at the **Madras Atomic Power Station, Kalpakkam**.

- ❖ This marked India's entry into the **vital second stage** of the country's **three-stage nuclear programme**.

### What is the PFBR?

- ❖ PFBR was constructed and will be operated by **Bharatiya Nabhikiya**.
  - ✓ Government approved the creation of Bharatiya Nabhikiya Vidyut Nigam Ltd (BHAVINI) in **2003**.
- ❖ The PFBR is a machine that **produces more nuclear fuel than it consumes**.

### The Salient Feature of the Reactor:

- ❖ The Fast Breeder Reactor (FBR) will initially use the **Uranium-Plutonium Mixed Oxide (MOX) fuel**.
- ❖ The **Uranium-238** "blanket" surrounding the fuel core will undergo **nuclear transmutation** to produce **more fuel, thus earning the name 'Breeder'**.
- ❖ The use of **Thorium-232**, which in itself is not a fissile material, as a blanket is also envisaged in this stage.
  - ✓ By transmutation, Thorium will create fissile **Uranium-233** which will be **used as fuel in the third stage**.

### Significance of the Fast Breeder Reactor

- ❖ FBR is a stepping stone for the third stage of the program paving the way for the **eventual full utilization of India's abundant thorium reserves**.
- ❖ It can produce more fuel than it consumes, thus **helping in achieving self-reliance** in fuel supply for future fast reactors.
- ❖ It is an advanced third-generation reactor with inherent passive safety features, ensuring a **prompt and safe shutdown** of the plant **in an emergency**.

- ❖ Since it uses spent fuel from the first stage, FBR also offers an **advantage in a significant reduction in nuclear waste generated.**
- ❖ Once commissioned, India will be the **second country after Russia** to have a **commercially operating fast breeder reactor.**

### India's Three-stage Nuclear Program

- ❖ **Homi J. Bhabha** designed the three-stage programme as India has **limited domestic uranium resources** but **has abundant Thorium.**
- ❖ The three stages are expected to allow the country **complete self-sufficiency in nuclear energy.**
- ❖ **First Stage (Pressurized Heavy Water Reactors – PHWRs):** India's nuclear program initially focused on establishing a fleet of PHWRs.
  - ✓ These reactors use natural uranium (**U-238**), which contains minuscule amounts of **U-235**, as the fissile material.
  - ✓ Heavy water (deuterium oxide) **as both moderator and coolant.**
  - ✓ The primary purpose of this stage was to **produce plutonium-239 as a byproduct from the uranium fuel.**
  - ✓ **Plutonium-239 is a fissile material** used as fuel in nuclear reactors.
- ❖ **Second Stage (Fast Breeder Reactors – FBRs):** The second stage of the program involves the **deployment of Fast Breeder Reactors (FBRs).**
  - ✓ FBRs are designed to produce **more fissile material than they consume** by **utilizing** a fast neutron spectrum.
  - ✓ In this stage, **plutonium-239** produced in the first stage is used as fuel along with **U-238** to produce energy, **U-233, and more Pu-239.**
  - ✓ **Uranium-233 is another fissile material** that can be used as fuel in nuclear **reactors.**
- ❖ **Third Stage (Advanced Heavy Water Reactors – AHWRs):** The final stage of the program entails the **deployment of Advanced Heavy Water Reactors (AHWRs).**
  - ✓ **Pu-239 will be combined with thorium-232 (Th-232)** in reactors to **produce energy and U-233.**
  - ✓ Thorium is abundantly available in India, and this **stage aims to harness its potential as a nuclear fuel.**

## NUCLEAR ENERGY PROGRAM IN INDIA

**Context:** A historic milestone in India's nuclear programme was achieved, when the process of core-loading the indigenous Prototype Fast Breeder Reactor (PFBR) was started at the Madras Atomic Power Station in Kalpakkam, Tamil Nadu. This process marks the beginning of stage II in India's three-stage nuclear Energy Program.

### What is India's three-stage nuclear energy program?

**Historical Background-** The roadmap of India's three-stage nuclear program was envisioned by Dr. Homi J Bhabha. The program had been conceived with the ultimate objective of utilising the country's vast reserves of thorium-232. India hosts roughly a quarter of the world's thorium, and the three stages are expected to make the country completely self-sufficient in nuclear energy.

### Three-stage Nuclear Energy Program

Stages	Aim	Fuel	Nuclear Reactor
<b>Stage I</b>	Establishment of domestic nuclear power industry	Uranium	Pressurized Heavy Water Reactors (PHWRs)
<b>Stage II</b>	Development of self-sustaining nuclear fuel cycle.	Plutonium	Fast Breeder Reactor (PFBR)
<b>Stage III</b>	Complete energy independence through domestic thorium resources.	Thorium	Advanced heavy water reactors (AHWRs)

## Working of 3-Stages

### Stage I

- In the Stage-I, India used the Pressurized Heavy Water Reactors (PHWRs) with natural uranium-238 (U-238) as the fuel. The U-238 contained minuscule amounts of U-235, as the fissile material.
- A nuclear fission process was initiated and heavy water (water molecules containing the deuterium isotope of hydrogen) slowed the release of neutrons released by one fission reaction enough to be captured by other U-238 and U-235 nuclei and cause new fission.
- The reactions produce fissile Plutonium-239 (Pu-239) and energy.

### Stage II

- Only U-235 can sustain a chain fissile reaction. However, it is consumed fully in stage I. Hence, Stage II aims at using the fissile Plutonium-239 (Pu-239) produced as the end product of Stage I with U-238 to produce energy, U-233 and more Pu-239.
- By the end of the second stage of the cycle, the reactor produces more fissile material than it consumes. Hence, it is called a 'Breeder' reactor. In these 'fast breeder' reactor, the neutrons aren't slowed.

### Stage III

- It focuses on combining Pu-239 with thorium-232 (Th-232) in advanced heavy water reactors to produce energy and U-233.
- This stage uses the naturally available thorium-232 in India and hence will help in achieving nuclear energy self-sufficiency.

## What are the important milestone events in India's Nuclear Energy Program?

The establishment of several institutions has played a critical role in driving India's Nuclear Energy Program.

### Passive Phase

- ❖ **1945:** Tata Institute of Fundamental Research (TIFR) was established by Homi J. Bhabha with the goal of conducting research in fundamental sciences.
- ❖ **1948:** The Atomic Energy Commission of India (AEC) was established as a government agency responsible for formulating and implementing the country's nuclear policy.
- ❖ **1954:** The Department of Atomic Energy (DAE) was created. It has been engaged in the development of nuclear power technology and applications of radiation technologies in the fields of agriculture, medicine, industry, and basic research.
- ❖ **1957:** Atomic Energy Establishment, Trombay (AEET) was established by Dr. Homi Bhabha for a multidisciplinary research program essential for the ambitious nuclear program of India. In 1966, AEET was renamed Bhabha Atomic Research Centre (BARC).
- ❖ **1963:** The USA and India sign an accord for the supply of enriched fuel to India's Tarapur nuclear power plant.
- ❖ **1969:** Nuclear Power Grid connection was established from the Tarapur Plant.

However, India did not sign the NPT in 1970, did not become a member of the NSG in 1974. After India's first nuclear Test, Smiling Buddha in 1974, there was widespread condemnation from the international community. There was international apartheid against India in supply of nuclear fuel.

### Active Phase

- ❖ **1987:** Nuclear Power Corporation of India Limited (NPCIL) was established as a public sector undertaking responsible for the generation of electricity from nuclear power.
- ❖ **2003:** Bharatiya Nabhikiya Vidyut Nigam Ltd. (BHAVINI) was set up by the Department of Atomic Energy (DAE) as a special-purpose vehicle to implement stage II of the 3-stage nuclear power program.
- ❖ **2022:** 22 operational reactors in India with a total installed capacity of, 6780 MWe (Megawatts electric). 10 nuclear power reactors with a total of 8000 MW capacity are under construction.

### What are the advantages of India's Nuclear Energy Programme?

1. **Energy Sovereignty-** Fossil-based energy sources contributed about 82% of the primary energy supplied in 2021. India imports a significant part of its fossil fuels (coal and gas) for energy generation. Bulk fuel imports raise economic and strategic vulnerabilities for a developing country like India. Nuclear energy can help India reduce its dependence on imported fuel.
2. **Decarbonisation of power Sector-** Thermal power plants have high carbon footprint as they contribute heavily to global warming, climate change and air pollution. Nuclear power plants will help in decarbonising the power sector.
3. **Limitations attached with other renewable energy sources-** Solar energy is land intensive, wind energy requires energy storage systems. Also, they require imported technologies and materials such as photovoltaic cells, batteries, and storage equipment. On the other hand, indigenous nuclear reactors have reduced dependency in critical imports.
4. **Cheaper to Operate-** Nuclear power plants are cheaper to operate than coal or gas plants, despite the cost of managing radioactive fuel and disposal. According to estimates, nuclear plants cost only 33-50% of a coal plant and 20-25% of a gas combined-cycle plant.
5. **Reliable and Continuous Power-** Nuclear energy provide reliable and continuous base load power, unlike solar and wind energy, which are intermittent and dependent on weather conditions.
6. **Resource Base-** India has vast thorium reserves which could be exploited using a thermal breeder reactor. A significant amount of thorium reserves are found in the monazite sands of coastal regions of South India.

### What are the challenges to India's Programme?

1. **Capital Intensive-** Nuclear power plants are capital intensive. There have been cost over runs in recently built nuclear power plants.
2. **Insufficient Installed Capacity-** The current installed capacity is only 6.78 GW, against the vision of 650GW of installed capacity by 2050 set by the Atomic Energy Commission.
3. **Nuclear Safety-** Local communities in India have been resisting nuclear reactors due to fears of nuclear disasters like Chernobyl, 1986 or Fukushima, 2011. For ex- Locals protesting against the Mithi viridi nuclear project in Gujarat.
4. **Nuclear Liability-** India's Civil Liability for Nuclear Damage Act 2010, has been a contentious issue for foreign suppliers. Foreign suppliers have been reluctant to invest in India's Nuclear Energy Programs due to fears of being held accountable for accidents beyond their control.
5. **Hurdles created by NSG and NPT-** India's non-ratification of NPT and lack of NSG membership, has created diplomatic hurdles in accessing more nuclear fuel and better nuclear technologies.
6. **Use of outdated Technology-** Currently operational Indian nuclear reactors have become outdated and suffer from multiple operational problems. For ex- 6 VVER (water-water energy reactor) design reactors encountering operational problems at Kudankulam.

### What should be the way Forward?

1. **Small Modular Reactors (SMRs)-** Indigenous Small Modular Reactors (SMRs) must be built at coal plant sites which would be retiring in the coming decades. SMRs offer the advantages of being safe, economical, compact and adaptable. Partnerships with NTPC and other thermal plant owners must be explored.
2. **Expansion of indigenous PHWR reactors-** The Indigenous 700 MWe PHWR, must be expanded in fleet mode to add to the installed nuclear power capacity in India.
3. **Push to the Stage-3 of Nuclear Power Program-** The second and third stages of nuclear-power programme must be propelled to utilise the existing thorium energy potential in the country.
4. **Development of Nuclear Fusion technology-** The development of nuclear fusion technology must be explored, which is safer than nuclear fission. The vast reserves, in the form of ocean water, will be added advantage for India.
5. **Augmentation of safety of nuclear facilities-** There must be constant updation of safety skills of nuclear operators. Further, masses must be comprehensively sensitised about the functioning of nuclear



power plants using highly intellectual individuals having mass appeal. For ex- Dr. APJ Abdul Kalam sensitizing the masses before the establishment of the Kudankulam nuclear power plant.

6. **Ensuring Regulatory Autonomy-** The AERB, India's nuclear regulatory body, must be provided functional autonomy by removing its reporting from the Department of Atomic Energy (DAE).

## INDIAAI MISSION

**Context:** The Union Cabinet approved the **IndiaAI Mission** for the **next five years**.

- ❖ The Mission will be implemented by '**IndiaAI**' Independent Business Division (IBD) under **Digital India Corporation (DIC)**.
- ❖ The IndiaAI mission will establish a **comprehensive ecosystem** catalyzing AI innovation through **strategic programs and partnerships** across the **public and private sectors**.

### Key Features of IndiaAI Mission

- ❖ **IndiaAI Compute Capacity:** The ecosystem will **comprise AI compute infrastructure of 10,000** or more **Graphics Processing Units (GPUs)**, built through public-private partnership.
  - ✓ Further, an **AI marketplace** will be designed to offer AI as a service and pre-trained models to AI innovators.
  - ✓ It will act as a **one-stop solution** for resources critical for AI innovation.
- ❖ **IndiaAI Innovation Centre:** It will undertake the development and deployment of **indigenous Large Multimodal Models (LMMs)** and domain-specific foundational models in critical sectors.
- ❖ **IndiaAI Datasets Platform:** The Platform will streamline access to quality non-personal datasets for AI Innovation.
  - ✓ A unified data platform will be developed to provide a one-stop solution for seamless access to non-personal datasets to Indian Startups and Researchers.
- ❖ **IndiaAI Application Development Initiative:** The initiative will focus on developing/scaling/promoting adoption of **impactful AI solutions** with potential for catalyzing **large scale socio-economic transformation**.
- ❖ **IndiaAI FutureSkills:** It is conceptualized to **mitigate barriers to entry into AI programs** and will **increase AI courses** in undergraduate, masters-level, and Ph.D. programs.
- ❖ **IndiaAI Startup Financing:** It is conceptualized to **support and accelerate deep-tech AI startups** and provide them streamlined access to funding to enable futuristic AI Projects.
- ❖ **Safe & Trusted AI:** The Safe & Trusted AI pillar will enable the **implementation of Responsible AI projects** including the development of indigenous tools and frameworks, self-assessment checklists for innovators, and other guidelines and governance frameworks.

### Significance

- ❖ The approved IndiaAI Mission will **propel innovation and build domestic capacities** to ensure the **tech sovereignty of India**.
- ❖ It will also create **highly skilled employment opportunities** to harness the demographic dividend of the country.
- ❖ It will drive responsible, inclusive growth of India's AI ecosystem.
- ❖ IndiaAI Mission will help India demonstrate to the world how this **transformative technology** can be used for **social good and enhance its global competitiveness**.

## AGNI-V MISSILE EQUIPPED WITH MIRV TECHNOLOGY

**Context:** India recently successfully tested a **new Agni-V missile with MIRV (Multiple Independently Targetable Reentry Vehicle) technology**, capable of carrying multiple warheads and striking multiple targets.

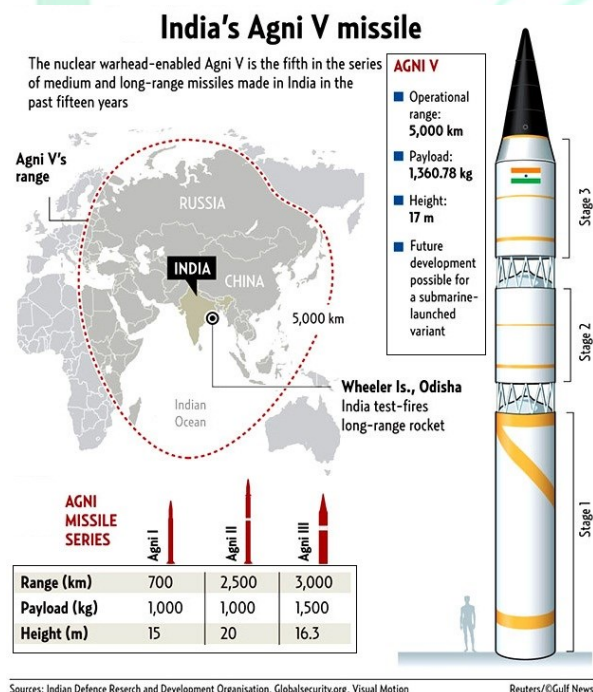
### MIRV technology

- ❖ **MIRV (Multiple Independently Targetable Reentry Vehicle)** technology is the capability that allows multiple warheads to be loaded on a single missile delivery system and programmed to hit different targets, thus greatly enhancing the missile's destructive potential.
- ❖ They can all be **made to hit the same location too**, one after the other, thus ensuring complete annihilation of the target.
- ❖ The technology was **developed in the 1960s** and first deployed in the 1970s by the United States and the then Soviet Union.
- ❖ Over the years, **France, the United Kingdom, and eventually China** have developed this technology. Pakistan too has claimed to have tested an MIRV-equipped missile called Ababeel, first in 2017 and then in 2023.
- ❖ The number of warheads that a missile can carry depends on its **design, weight, size, range and other parameters**. The one that India tested can carry **three to four** warheads.
- ❖ However, an **MIRV-equipped missile has never been used so far in any conflict situation**. Arms control advocates argue that MIRV technology incentivises the **urge to strike first**, thus increasing the risk from nuclear weapons.

### Advantages of MIRV Technology

- ❖ Apart from the obvious advantage of **inflicting multiple damages** with a single strike, MIRV is a sought-after military technology for its **ability to penetrate missile defence systems**.
- ❖ A missile defence system is a network of technologies aimed at **detecting, tracking, intercepting and destroying an incoming missile**. It's considered a good safeguard against traditional missiles.
- ❖ Another key strategic benefit, especially for countries like **India which has a no-first use policy for nuclear weapons**, is the capability to cause crippling damage in a response strike. The response strike could be disproportionate, and can thus **serve as a deterrence to the enemy**.

### Agni-V Missile: One Missile, Many Weapons



- ❖ The integration of MIRV technology is a long-awaited upgrade for the Agni family of **short, medium and intercontinental range ballistic missiles indigenously developed** by the DRDO.
- ❖ Agni missiles are the main **land-based delivery systems** for India's nuclear weapons.
- ❖ **Developed in the 1990s**, the first-generation Agni missiles were deployed in the armed forces in the mid-2000s.
- ❖ Agni-I to Agni-IV missiles have ranges between **700 to 3,500 km** and can carry single payloads weighing between **12 and 40 kilotons**.

- ❖ Agni-V, the version that has been equipped with MIRV technology, can travel **more than 5,000 km**, and can potentially enter the intercontinental range as well, considered to be 5,500 km and above.
- ❖ Meanwhile, DRDO has also been developing **Agni-P missiles**, which are **modernised versions of the short-range Agni-1 and Agni-2 variety**. There was the expectation that it would be integrated with MIRV technology.
- ❖ The acquisition of MIRV technology by India was keenly awaited after China developed it in the last decade. With Pakistan also claiming to have tested a missile with this technology, **integrating this in Agni missiles had become an imperative**.
- ❖ The next generation **Agni-VI missile**, currently under development, is also expected to be equipped with MIRV.

## SAMUDRAYAAN MISSION

**Context:** The minister of Earth Sciences confirmed that the **Samudrayaan mission** is scheduled to explore the bed of the **ocean by 2025 end**.

- ❖ India is on a path to send its scientists **to study the deep ocean 6 km under the sea surface** under the mission.

### India's Deep Ocean Mission (DOM)

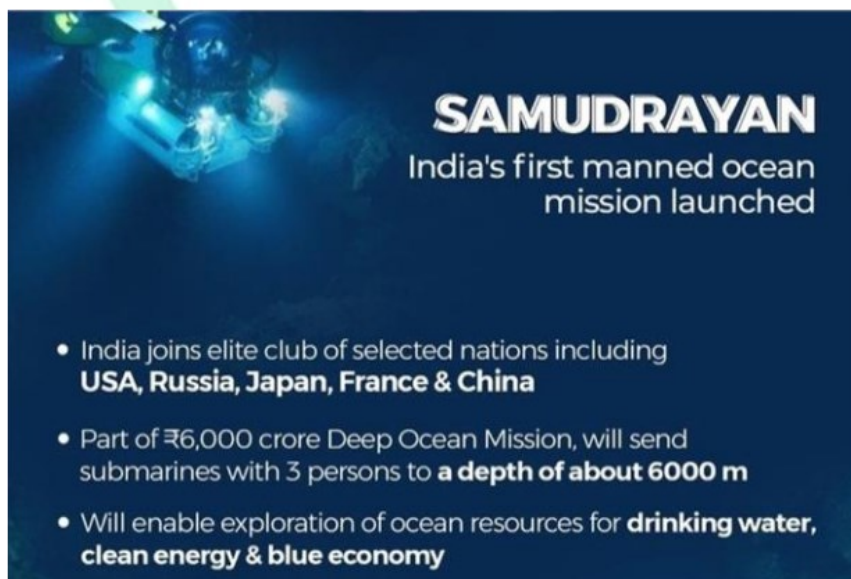
- ❖ DOM is implemented by the **Ministry of Earth Sciences (MoES)** and was approved in 2021 at a cost of nearly **Rs 4,077 crore** over a five-year period in a phased manner.

### Samudrayaan Mission

- ❖ As a part of DOM, India's flagship deep ocean mission, 'Samudrayaan', was initiated in 2021 by the **Ministry of Earth Sciences**.
- ❖ With 'Samudrayaan', India is embarking on a **crewed expedition to reach a depth of 6,000 m** to the ocean bed in the central Indian Ocean.
- ❖ This journey will be accomplished by **Matsya6000, a deep-ocean submersible**.

### Matsya6000

- ❖ The Matsya6000 is **India's flagship deep-ocean human submersible** that aims to reach the ocean bed at a depth of 6,000 m.
- ❖ Accompanied by **three crew members, called "aquanauts"**, the submersible carries a suite of scientific tools and equipment designed to facilitate observations, sample collection, basic video and audio recording, and experimentation.



**SAMUDRAYAAN**  
India's first manned ocean mission launched

- India joins elite club of selected nations including **USA, Russia, Japan, France & China**
- Part of ₹6,000 crore Deep Ocean Mission, will send submarines with 3 persons to **a depth of about 6000 m**
- Will enable exploration of ocean resources for **drinking water, clean energy & blue economy**

- ❖ The submersible will be equipped with a **suite of scientific sensors and tools**, and have an operational endurance of **12 hours**, which is expandable up to 96 hours in the event of an emergency.

- ❖ Constructed from a **titanium alloy**, the sphere is engineered to withstand pressures of up to **6,000 bar**.
- ❖ It can move at a speed of about **5.5 km/hr** using underwater thrusters.

### Significance

- ❖ So far, countries such as the **U.S., Russia, China, France and Japan** have carried out successful deep-ocean crewed missions. **India is poised to join the ranks of these nations** by demonstrating expertise of and capability for such missions.
- ❖ The '**New India 2030**' document outlines the blue economy as the sixth core objective for India's growth. The years 2021-2030 have been designated by the United Nations as the '**Decade of Ocean Science**'.
- ❖ DOM is one of nine missions under the **Prime Minister's Science, Technology, and Innovation Advisory Council (PMSTIAC)**.
- ❖ The mission is significant for the **sustainable extraction of valuable resources, including polymetallic nodules and polymetallic sulfides**.

### PRIVATE INDUSTRY IN SPACE SECTOR

**Context:** The Chennai-based space start-up will launch its first rocket Agnibaan Sub Orbital Technology Demonstrator from the Satish Dhawan Space Centre in Sriharikota.

#### India's share in Space Industry

- ❖ India constitutes **2-3%** of the global space economy and is expected to enhance its share to more than **10% by 2030**.
- ❖ With over **400** private space companies, India ranks **fifth globally** in no. of space companies.

#### % of global market share

US	<b>40%</b>
UK	<b>7%</b>
India	<b>2%</b>

Global space economy (in 2021)	<b>USD 386B</b>
India (in 2021)	<b>USD 7.6B</b>
India to grow (by 2025)	<b>USD 50B</b>

#### Private players in space industry

- ❖ Indian start-ups are taking active interest in the space market, from just 1 start-up in the space sector in 2012 to **189 start-ups in 2023**.
- ❖ The funding received by these start-ups reached a total of **\$124.7 Mn in 2023** from \$67.2 Mn in 2021.
- ❖ The Skyroot, have launched India's first privately built rocket, **Vikram-S**, into space, with plans to revolutionize satellite launches.

#### Regulation of the Private sector in the Space industry in India

- ❖ **National Space Promotion and Authorisation Centre (IN-SPACE):** It is an autonomous and single window nodal agency in the Department of Space for the promotion, encouragement and regulation of space activities of both government and private entities.
- ❖ **NewSpace India Ltd (NSIL):** It is mandated to transfer the matured technologies developed by the ISRO to Indian industries.
  - ✓ All of them are under the purview of the Ministry of Defence.

#### Steps taken by Government

- ❖ **SpaceTech Innovation Network (SpIN):** SpIN is a one-of-its-kind public-private collaboration for start-ups and SMEs in the space industry.
- ❖ **The Indian Space Policy 2023** was notified to implement the vision for unlocking India's potential in the Space sector through enhanced private participation.
- ❖ Various schemes to encourage the private sector have been implemented by IN-SPACE, i.e., Seed Fund Scheme, Pricing Support Policy, Mentorship support, Design Lab for NGEs, Skill Development in Space Sector, ISRO facility utilization support, Technology Transfer to Non-Governmental Entities (NGEs).

### FDI in space sector

- ❖ Under the amended FDI policy, **100% FDI is allowed** in the space sector. The entry route for the various activities are as follows:
  - ✓ **Up to 74% under Automatic route:** Satellites-Manufacturing & Operation, Satellite Data Products and Ground Segment & User Segment.
  - ✓ **Up to 49% under Automatic route:** Launch Vehicles and associated systems or subsystems, Creation of Spaceports for launching and receiving Spacecraft.
  - ✓ **Up to 100% under Automatic route:** Manufacturing of components and systems/ sub-systems for satellites, ground segment and user segment.

### Significance of privatization of space sector

- ❖ Private companies operate with a profit motive, which drives them to **reduced costs** in space missions and satellite launches.
- ❖ Privatization introduces **competition into the space industry**, which can drive efficiency and innovation.
- ❖ Private players facilitate the **commercialization of space applications** and services for agriculture, disaster management, urban planning, navigation, and communication, among other sectors.
- ❖ private companies have a **greater degree of autonomy** in making decisions, which enables them to take up new projects.
- ❖ It helps to generate employment, enable modern technology absorption and make the sector self-reliant.

### Challenges

- ❖ Space technology is expensive and needs heavy investment. This kind of lucrative power is available only with selected rich corporates, thus can lead to **monopolization of the sector**.
- ❖ Building and operating space technology and infrastructure **require specialized technical expertise** and resources.
- ❖ **Protecting intellectual property rights (IPR)** is crucial for incentivizing innovation and investment in the space sector.
- ❖ Indian private companies in the space sector have to face stiff **competition from the established players** such as SpaceX, Blue Origin etc in the international market.

### Way Ahead

- ❖ Private entities are now actively involved in crucial aspects of research, manufacturing, and fabrication of rockets and satellites, fostering a vibrant ecosystem of innovation. It is expected to integrate Indian companies into global value chains.
- ❖ With this, companies will be able to set up their manufacturing facilities within the country duly encouraging '**Make In India (MII)**' and '**Atmanirbhar Bharat**' initiatives of the Government.

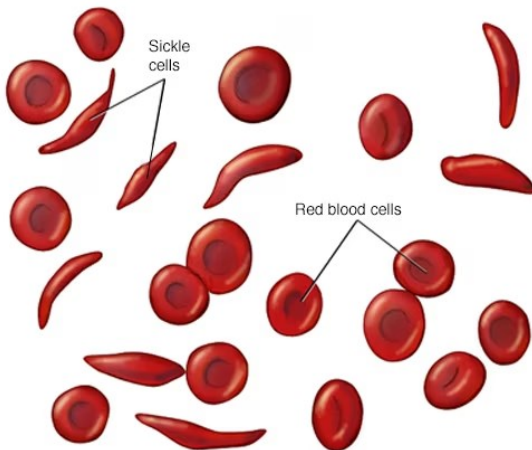
## SICKLE CELL ANAEMIA & CRISPR TECHNOLOGY

**Context:** Marginalised tribal communities face difficulties in accessing basic healthcare and diagnostics of **Sickle cell disease (SCD)**.

### About Sickle cell disease (SCD)

- ❖ It is an **inherited haemoglobin** disorder in which red blood cells (RBCs) become crescent or sickle-shaped due to a genetic mutation.

- ✓ These RBCs are rigid and impair circulation, often leading to anaemia, organ damage, severe and episodic pain, and premature death.
- ❖ India has the **third highest number of SCD births**, after Nigeria and the Democratic Republic of the Congo. Regional studies suggest approximately 15,000-25,000 babies with SCD are born in India every year, mostly in tribal communities.
- ❖ According to the 2023 'Guidelines for National Programme for Prevention and Management of Sickle Cell Disease', of the 1.13 crore persons screened in different states, about 8.75% (9.96 lakh) tested positive.
- ❖ It is also one of the **21 "specified" disabilities** listed in the Schedule of the Rights of Persons with Disabilities Act 2016.



- ❖ **Steps** : In 2023, the Government of India launched the National Sickle Cell Anaemia Elimination Mission, to eliminate SCD by 2047.
- ❖ **Challenges**: At present treatment and care for SCD remains grossly inadequate and inaccessible.
  - ✓ Like the **(un)availability of the drug hydroxyurea**
  - ✓ **Blood transfusion** is another important therapy for SCD, but its availability is limited to district-level facilities.
  - ✓ **Bone marrow transplantation (BMT)**, until recently the other cure for SCD, is out of reach for most SCD patients due to the difficulty in finding matched donors, the high cost of the treatment at private facilities, and long waiting times in public hospitals.
- ❖ **Solution**: the application of the gene-editing technology called CRISPR (short for 'Clustered Regularly Interspaced Short Palindromic Repeats') to treat SCD is important — for its novelty and promise but also for the health disparities it makes apparent.
- ❖ The U.S. Food and Drug Administration recently approved two gene therapies, Casgevy and Lyfgenia, to treat SCD in people ages 12 and older.
- ❖ **CRISPR in India**: In India, CRISPR's possible medical applications also pose ethical and legal quandaries.
  - ✓ The National Guidelines for Stem Cell Research 2017 prohibit the commercialisation of stem cell therapies .
  - ✓ Gene-editing stem cells is allowed only for in-vitro studies.
  - ✓ India has approved a five-year project to develop CRISPR for sickle cell anaemia.
  - ✓ Under its Sickle Cell Anaemia Mission, the Council of Scientific and Industrial Research is developing gene-editing therapies for SCD.
- ❖ Adopting and promoting advanced therapies like CRISPR in India requires a comprehensive approach that accounts for inequities and disparities in the country's overall healthcare access framework.

## ENVIRONMENT

### DISCLOSURE FRAMEWORK ON CLIMATE-RELATED FINANCIAL RISKS, 2024

**Context: The Reserve Bank of India (RBI)** has released a **draft Disclosure Framework on Climate-related Financial Risks, 2024** for banks to follow.

#### About

- ❖ The regulated entities i.e., banks are meant to **disclose information about their climate related financial risks and opportunities** for the users of financial statements.
- ❖ It acknowledges the **importance of the environment** and its **long-term impact** on organisations and the economy as a whole.

#### What are Climate-related Financial Risks?

- ❖ The RBI has defined climate-related financial risks as the **potential risks** that may arise from **climate change or from efforts to mitigate climate change**, their **related impacts** and economic and financial consequences.
- ❖ It can impact the financial sector through two broad channels i.e., **physical risks and transition risks**.
- ❖ **Physical Risks:** It refers to the economic costs and financial losses **resulting from the increasing frequency and severity of** extreme climate change-related weather events.
- ❖ **Impact on REs: Expected cash flows** to the REs from an exposure may be **stressed** on the occurrence of a local / regional weather event.
  - ✓ Chronic flooding or landslides may present a **risk to the value of the collateral that REs** have taken as security against loans.
  - ✓ Severe weather events **may damage a RE's owned or leased physical property** and data centers, thereby, affecting its ability to provide financial services to its customers.
- ❖ **Transition Risks:** It refers to the risks arising from the **process of adjustment towards a low-carbon economy**.
  - ✓ A range of factors influences this adjustment, including changes in climate-related policies and regulations, the emergence of newer technologies, shifting sentiments and behaviour of customers.
  - ✓ The process of transition i.e., reducing carbon emissions may have a **significant impact on the economy**.

#### About the Framework:

- ❖ All India financial institutions, and top and upper layer NBFCs will have to begin to provide information on **governance, strategy, and risk management strategy from 2025-26** and begin disclosure metrics and targets from 2027-28.
- ❖ Banks will be mandated to disclose those climate-related risks which have a **bearing on their financial stability**.
- ❖ The revelation will foster an **early assessment of climate-related financial risks** and opportunities and also facilitate market discipline.
- ❖ Organisations **under the Purview:**
  - ✓ All scheduled commercial banks (excluding local area banks, payments banks and regional rural banks).
  - ✓ All Tier -IV primary (urban) and cooperative banks (UCBs).
  - ✓ All top and upper layer non-banking financial companies.
- ❖ **Disclosure by the REs:**

- ✓ Identified climate-related risks and opportunities over short, medium and long term.
- ✓ The impact of climate-related risks and opportunities on their businesses, strategy and financial planning.
- ✓ The resilience of the RE's strategy taking into consideration the different climate scenarios.

### Significance

- ❖ There is an urgent need for a better and consistent disclosure framework for regulated entities, without which the financial risks can lead to mispricing of assets and misallocation of capital.
- ❖ This essentially led to a standard disclosure framework on climate related financial risks.

## GLOBAL WARMING AND IMPACT ON INDIA

**Context:** About **90% of the Himalayan Region is going to experience drought** lasting over a year if global warming increases by **3 degrees Celsius**, according to new research led by researchers at the University of East Anglia (UEA) in the U.K.

### Major Highlights of the Study

- ❖ **Pollination:** It found that in India **pollination is reduced by half at 3-4 degrees** global warming compared to a **quarter reduction at 1.5 degrees**.
- ❖ **Biodiversity: Limiting warming to 1.5 degrees Celsius** allows **half the country** to act as a **refuge for biodiversity**, compared with **6% at 3 degrees**, the researchers said.
- ❖ **Agriculture:** The team found more than **50% of the agricultural land in India** will be **exposed to drought with 3 degrees Celsius warming** and is projected to be exposed to severe droughts of longer than one year over a 30-year period.
- ❖ **Sea-level rise:** Economic damages associated with sea-level rise are projected to increase in coastal nations, but more slowly if warming was limited to 1.5 degrees Celsius, they said.
- ❖ **Natural capital risk:** Areas in the six countries studied, including India, are already at high natural capital risk at 1.5 degrees Celsius when effects of increasing human population are accounted for.
- ❖ **Climate change risks:** They provide additional confirmation of the rapid escalation of climate change risks with global warming found in the Intergovernmental Panel of Climate Change (IPCC) 2022 report, which identifies how the risk of severe consequences increases with every additional increment of global warming.

### Suggestions/Recommendations

- ❖ **Adhere to Paris agreement goals:** Limiting global warming to 1.5 degrees Celsius would reduce the increase in exposure of agricultural land to drought by between 21% , 80% of the increased human exposure to heat stress can be avoided and also economic damages due to fluvial flooding can be reduced.
- ❖ **Enhanced efforts:** The researchers warned that more effort is needed to reduce global warming, as currently the policies in place globally are likely to result in 3 degrees Celsius of global warming.
- ❖ **Expansion of protected area:** The findings also showed that an expansion of protected area networks is necessary in order to deliver climate resilient biodiversity conservation.
- ❖ **Mitigation as well as adaptation:** Greater emphasis needs to be placed on both climate change mitigation and climate change adaptation to avoid large increases in risk to both human and natural systems.
- ❖ **Restore ecosystems:** A good way to combat the effects of climate change on natural systems and soak up carbon from the atmosphere is to restore ecosystems to their natural state. This has the additional benefit of restoring the natural capital bank in these areas.

### Global warming

- ❖ It refers to the **long-term heating of Earth's climate system** observed since the **pre-industrial period (between 1850 and 1900)**, primarily due to human activities.
- ❖ This process **releases greenhouse gases like carbon dioxide, trapping heat in the atmosphere** and causing the planet to warm.



## METHANESAT

**Context:** MethaneSAT, a new satellite backed by **Alphabet Inc's Google** and the Environmental Defense Fund group, was launched recently.

### About

- ❖ The satellite **will track and measure methane emissions** at a global scale and was launched aboard a SpaceX Falcon9 rocket from California.
- ❖ It is not the first spacecraft to identify and quantify methane emissions, it will provide **more details** and have a **much wider field of view** than any of its predecessors.

### Methane Emissions and Need to Track it

- ❖ **Contribution of Methane Gas:** Methane is an **invisible but strong greenhouse gas**, and the **second largest contributor** to global warming after carbon dioxide, responsible for **30 percent of global heating** since the Industrial Revolution.
  - ✓ According to the United Nations Environment Programme, **over a period of 20 years**, methane is **80 times more potent** at warming than carbon dioxide.
- ❖ **Formation of Ground level Ozone:** The gas also contributes to the **formation of ground-level ozone** — a **colourless and highly irritating gas** that forms just above the Earth's surface.
  - ✓ Exposure to ground-level ozone could be **contributing to one million premature deaths every year**.
- ❖ **Major Contributor:** The main reason is fossil fuel operations, which account for about **40 percent** of all human-caused methane emissions.
- ❖ Therefore, it is **crucial to cut methane emissions** and the **objective of MethaneSAT** is to help achieve this goal.

### About MethaneSAT

- ❖ It is developed by the **Environmental Defense Fund (EDF)** — a US-based nonprofit environmental advocacy group with Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.
- ❖ **MethaneSAT** will **orbit the Earth 15 times a day**, monitoring the oil and gas sector.
- ❖ **Specifications:** It can track **differences in methane concentrations** as small as three parts per billion in the atmosphere, which enables it to pick up smaller emissions sources than the previous satellites.
  - ✓ MethaneSAT also has a wide-camera view of about 200 km by 200 km allowing it to identify larger emitters so-called **“super emitters”**.
- ❖ **Tracking and Data Creation:** It will create a **large amount of data** to disclose how much methane is coming from where, who's responsible, and are those emissions going up or down over time.
  - ✓ The collected data will be analysed using cloud-computing and AI technology developed by Google — the company is a mission partner — and the **data will be made public through Google's Earth Engine platform**.
- ❖ **Significance:** This will allow stakeholders and regulators to take action to reduce methane emissions.

## RISING GLOBAL SEA SURFACE TEMPERATURE

**Context:** The average global sea surface temperature (SST) for February 2024 stood at **21.06 degree Celsius**, the **highest ever** in a dataset that goes back to **1979**.

- ❖ Sea surface temperature is the **temperature of the water at the ocean surface**.

### Reasons for Rising SST

- ❖ **Human Activities:** Since the **Industrial Revolution** kicked off in the 19th Century, human activities such as burning fossil fuels have released high levels of **greenhouse gases (GHGs)** in the atmosphere.
  - ✓ Carbon dioxide, methane, ozone, and nitrous oxide are some of the notable GHGs, which trap heat in the atmosphere and contribute to global warming.
  - ✓ As a result, the average global temperature has risen at least **1.2 degree Celsius above pre-industrial times**.
- ❖ **Absorption by Oceans:** **Almost 90 percent** of the extra heat trapped by GHGs has been **absorbed by the oceans**, making them steadily warmer over the decades.
- ❖ **El Niño:** A weather pattern that refers to an abnormal warming of surface waters in the equatorial Pacific Ocean — has contributed to both **ocean warming and rising global surface temperatures**.
- ❖ **Weaker Winds:** There is also **less dust blowing off the Sahara Desert** recently due to **weaker-than-average winds**.
  - ✓ Typically, the dust forms a **“giant umbrella that shades”** the Atlantic water and reduces ocean temperatures.
  - ✓ But now, the umbrella has partially folded and more of the Sun is beating down on the ocean.

### Impact of Rising SST

- ❖ **Ocean Stratification:** Warmer oceans lead to an **increase in ocean stratification** — the **natural separation of an ocean’s water into horizontal layers** by density, with warmer, lighter, less salty, and nutrient-poor water layering on top of heavier, colder, saltier, nutrient-rich water.
  - ✓ Usually, **ocean ecosystems, currents, wind, and tides mix these layers**.
  - ✓ The rise in temperatures, however, has made it **harder for water layers to mix with each other**.
  - ✓ Due to this, oceans are able to absorb less carbon dioxide from the atmosphere and the oxygen absorbed isn’t able to mix properly with cooler ocean waters below, **threatening the survival of marine life**.
- ❖ **Threat to Phytoplanktons:** Nutrients are not able to travel up to the surface of the oceans from below. This could **threaten the population of phytoplankton** — single-celled plants that thrive on the ocean surface and are the base of several marine food webs.
  - ✓ Phytoplankton are **eaten by zooplankton**, which are consumed by other marine animals such as crabs, fish, and sea stars.
  - ✓ Therefore, if the phytoplankton population plummets, there could be a **collapse of marine ecosystems**.
- ❖ **Marine Heat Waves:** Warmer oceans cause marine heat waves (MHWs), which occur when the surface temperature of a particular region of the sea **rises to 3 or 4 degree Celsius** above the average temperature for **at least five days**.
  - ✓ Between **1982 and 2016**, such heatwaves have **doubled in frequency** and have become **longer and more intense**, according to the UN’s Intergovernmental Panel on Climate Change (IPCC).
  - ✓ MHWs are devastating for marine ecosystems as they contribute to **coral bleaching**, and also impact the **migration pattern of aquatic animals**.
- ❖ **Increase in Intensity of Cyclones:** Warmer temperatures lead to a **higher rate of evaporation** as well as the **transfer of heat from the oceans to the air**.
  - ✓ That’s why, when storms travel across hot oceans, they gather **more water vapour and heat**.
  - ✓ This results in **more powerful winds, heavier rainfall, and more flooding** when storms reach the land — meaning heightened devastation for humans.

### Conclusion

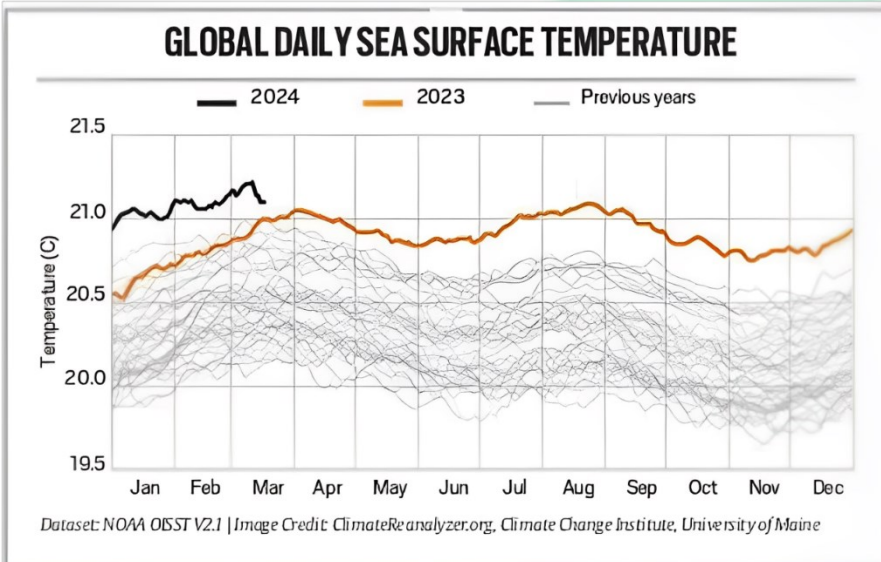
- ❖ In 2023, **the concentration of GHG the highest levels ever recorded in the atmosphere**.
- ❖ The only way to avoid or blunt the aforementioned consequences is to **reduce GHG emissions**.

### WHY DO GLOBAL SEA SURFACE TEMPERATURES MATTER?

**Context:** Almost **90 per cent of the extra heat trapped by greenhouse gases has been absorbed by the oceans**, making them steadily warmer over the decades, according to the **Copernicus Climate Change Service (C3S)**.

**About:**

- ❖ The **average global sea surface temperature (SST)** for February 2024 stood at **21.06 degree Celsius**, the highest ever in a dataset that goes back to 1979, as per the Copernicus Climate Change Service (C3S).
  - ✓ The **previous record of 20.98 degree Celsius** was set in August 2023.



**IMPACT OF WARMER OCEANS**

<p><b>Increase</b> in ocean stratification, which leads to less absorption of carbon dioxide by oceans</p> <p><b>Marine</b> heat waves become more frequent and more intense</p>	<p><b>Nutrients</b> are not able to travel up to ocean surface from below, threatening a collapse of marine ecosystem</p> <p><b>Hurricanes</b> and cyclones may also become more frequent</p>	<p>and more intense <b>Coral</b> bleaching takes place. It reduces the reproductivity of corals and makes them more vulnerable to life-threatening diseases</p>
--	---	---

**Why are the oceans getting warmer?**

- ❖ **Human factors:** Since the Industrial Revolution kicked off in the 19th Century, human activities such as burning fossil fuels have released high levels of greenhouse gases (GHGs) in the atmosphere.
  - ✓ **Carbon dioxide, methane, ozone, and nitrous oxide are some of the notable GHGs**, which essentially trap heat in the atmosphere and contribute to global warming.
    - As a result, **the average global temperature has risen at least 1.2 degree Celsius** above pre-industrial times.
- ❖ **Warming Rate:** The top part of the ocean is warming up about 24% faster than it did a few decades ago, and that rate is likely to increase in the future.
- ❖ **Absorption by oceans:** Almost 90 per cent of the extra heat trapped by GHGs has been absorbed by the oceans, making them steadily warmer over the decades.
- ❖ **El Niño:** A weather pattern that refers to an abnormal warming of surface waters in the equatorial Pacific Ocean has contributed to both ocean warming and rising global surface temperatures.

**Why are rising sea surface temperatures a cause of worry?**

- ❖ **Impact on Marine Life:** Higher ocean temperatures can have irreversible consequences for marine ecosystems.

- ✓ For instance, warmer oceans lead to an **increase in ocean stratification** — the natural separation of an ocean's water into horizontal layers by density, with warmer, lighter, less salty, and nutrient-poor water layering on top of heavier, colder, saltier, nutrient-rich water.
- ❖ **The rise in temperatures made it harder for water layers to mix with each other:** Due to this, oceans are able to absorb less carbon dioxide from the atmosphere and the oxygen absorbed isn't able to mix properly with cooler ocean waters below, threatening the survival of marine life.
- ❖ **Effect on nutrient circulation:** Nutrients are also not able to travel up to the surface of the oceans from below. This could threaten the population of phytoplankton — single-celled plants that thrive on the ocean surface and are the base of several marine food webs.
  - ✓ Phytoplankton are eaten by zooplankton, which are consumed by other marine animals such as crabs, fish, and sea stars. Therefore, if the phytoplankton population plummets, there **could be a collapse of marine ecosystems**.
- ❖ **Marine heat waves (MHWs):** Warmer oceans cause marine heat waves (MHWs), which occur when the surface temperature of a particular region of the sea rises to 3 or 4 degree Celsius above the average temperature for at least five days.
  - ✓ **Between 1982 and 2016, such heat waves have doubled in frequency** and have become longer and more intense, according to IPCC.
  - ✓ MHWs are devastating for marine ecosystems as they **contribute to coral bleaching**, which reduces the reproductivity of corals and makes them more vulnerable to life-threatening diseases and also impact the **migration pattern of aquatic animals**.
- ❖ **Extreme weather events:** According to several studies, higher ocean temperatures may also result in more frequent and more intense storms like hurricanes and cyclones.
  - ✓ Warmer temperatures lead to a **higher rate of evaporation** as well as the **transfer of heat from the oceans to the air**. That's why, when storms travel across hot oceans, they gather more water vapor and heat. This results in more powerful winds, heavier rainfall, and more flooding.
- ❖ **Deoxygenation and Sea-Level Rise:** Ocean warming leads to deoxygenation, a reduction in the amount of oxygen dissolved in the ocean and sea-level rise resulting from the thermal expansion of seawater and continental ice melting.

### Suggestions/Recommendations

- ❖ **Adhere to Paris agreement goals:** Limiting global warming to 1.5 degrees Celsius would reduce the increase in exposure of agricultural land to drought by between 21% , 80% of the increased human exposure to heat stress can be avoided and also economic damages due to fluvial flooding can be reduced.
- ❖ **Enhanced efforts:** The researchers warned that more effort is needed to reduce global warming, as currently the policies in place globally are likely to result in 3 degrees Celsius of global warming.
- ❖ **Expansion of protected area:** The findings also showed that an expansion of protected area networks is necessary in order to deliver climate resilient biodiversity conservation.
- ❖ **Mitigation as well as adaptation:** Greater emphasis needs to be placed on both climate change mitigation and climate change adaptation to avoid large increases in risk to both human and natural systems.
- ❖ **Restore ecosystems:** A good way to combat the effects of climate change on natural systems and soak up carbon from the atmosphere is to restore ecosystems to their natural state. This has the additional benefit of restoring the natural capital bank in these areas.

### Way Ahead

- ❖ These disastrous consequences of global warming are set to become **worse as the world continues to get warmer**.

- ❖ **The World Meteorological Organisation (WMO) in its 2023 State of Global Climate report** said there was a 66 percent chance that at least **one of the years between 2023 and 2027 would cross the threshold of 1.5 degree Celsius** above pre-industrial levels.
- ❖ The way to avoid or blunt the aforementioned consequences is to **reduce GHG emissions**.

## SOLAR WASTE

**Context:** India's solar waste could reach **600 kilotonnes by 2030** as per a study published by **Council on Energy, Environment and Water (CEEW)** in collaboration with the **Ministry of New and Renewable Energy (MNRE)**.

### Key Findings

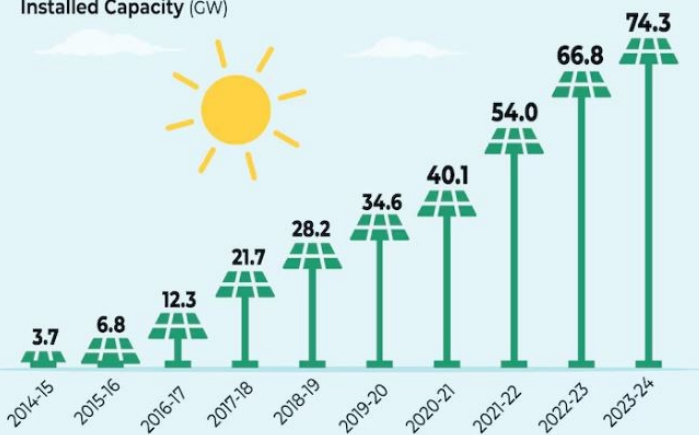
- ❖ **Waste Generation:** India's installed **66.7 gigawatt (GW) capacity, as of FY23**, has generated about **100 kilotonnes (kt)** of cumulative waste, which will increase to **340 kt by 2030**.
  - ✓ This volume will increase **32 times by 2050** resulting in about **19000 kt** of cumulative waste.
- ❖ **States Contribution:** Around **67 percent** of this waste is expected to be generated in five states: **Rajasthan, Gujarat, Karnataka, Tamil Nadu and Andhra Pradesh**.
  - ✓ Rajasthan will account for **24 percent** of the waste generated by 2030, followed by **Gujarat** accounting for **16 percent**, and **Karnataka** accounting for **12 percent**.

### India's Solar Capacity

- ❖ Globally, India has emerged as a significant player in renewable energy, ranking **fourth in total renewable power capacity** additions and **fifth in solar power capacity**.
- ❖ From 2014 to 2024, India also saw an expansion in its installed capacity for energy generation, increasing from **3.74 GW in FY 2014-15 to 74.31 GW in FY 2023-24 (till January)**.

India's solar energy sector surged from 3.74 GW in 2014-15 to 74.31 GW by 2023-24

Installed Capacity (GW)



- ❖ It is **slated to jump to 292 GW** of installed solar capacity by **2030**.

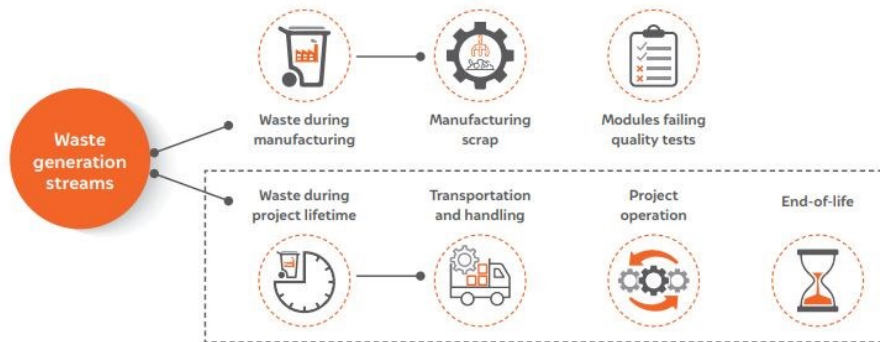
### Solar Waste

- ❖ Solar waste refers to the **waste generated during the manufacturing of solar modules and waste from the field (project lifetime)**.
- ❖ **Manufacturing** involves **two streams of waste**, including the scrap that's produced and the waste generated from PV modules failing quality tests.
- ❖ Waste from the field involves **three streams of waste**.
  - ✓ Waste generated **during transporting and handling** — the damaged modules are considered as waste.
  - ✓ Waste produced due to the **damage incurred by solar modules** during their lifetime.

✓ When the modules reach their **end-of-life** and are not usable anymore.

- ❖ The **study only focused on waste from the field** (project lifetime) category and excluded waste generated during manufacturing.

Figure 2 Multiple streams contribute to solar waste



### Key Recommendations

- ❖ The policymakers should maintain a **comprehensive database** of the installed solar capacity, which would help in estimating solar waste in the following years.
- ❖ The MoEFCC should **issue guidelines for collecting and storing solar waste**.
  - Furthermore, it should also **promote safe and efficient processing** of stored waste.
- ❖ Solar cell and module producers should start **developing waste collection and storage centres** to adhere to the responsibilities assigned in the **E-waste Management Rules 2022**.
- ❖ Policymakers should **incentivise recyclers**, and push **stakeholders to effectively manage the growing solar waste**.

### Solar Waste Recycling Methods

- ❖ **Conventional Recycling or Bulk Material Recycling:** It involves mechanical processes like crushing, sieving, and shearing of the waste.
  - ✓ While the majority of recycled materials consist of glass, aluminium, and copper, more valuable materials like silver and silicon cannot be recovered through this method.
- ❖ **High Value Recycling:** It involves the use of a combination of mechanical, chemical, and thermal processes to recycle the modules.
  - ✓ Unlike conventional recycling, this method can recover silver and silicon also with the help of chemical processes.

### India's Solar Waste Management Policy

- ❖ The management of waste generated from solar PV modules, panels and cells is part of the **Electronic Waste Management Rules 2022**.
- ❖ The rules mandate solar PV module and cell producers to **store the waste** generated from solar PV modules and cells up to 2034 – 2035 as per the guidelines laid down by the **Central Pollution Control Board (CPCB)**.
- ❖ The rules also mandate the **filing of annual returns** on the e-waste management portal up to 2034 – 2035.
- ❖ Every recycler of solar PV modules and cells shall be mandated for the **recovery of materials as laid down by the CPCB**.

## INDIA'S PLASTIC WASTE MANAGEMENT (AMENDMENT) RULES, 2024

**Context:** The **Ministry of Environment and Forests (MoEF)** has introduced a new set of amendments to **India's Plastic Waste Management (Amendment) Rules, 2024**.

### About

- ❖ It defines **biodegradable plastics** as **not only capable of degradation** by biological processes in specific environments such as soil, landfill but **also as materials that do not leave any microplastics**.
- ❖ **Rules** specify that the **makers of disposable plastic ware** can label them as biodegradable **only when they do not leave any microplastics behind**.

#### **Need for the Amendment**

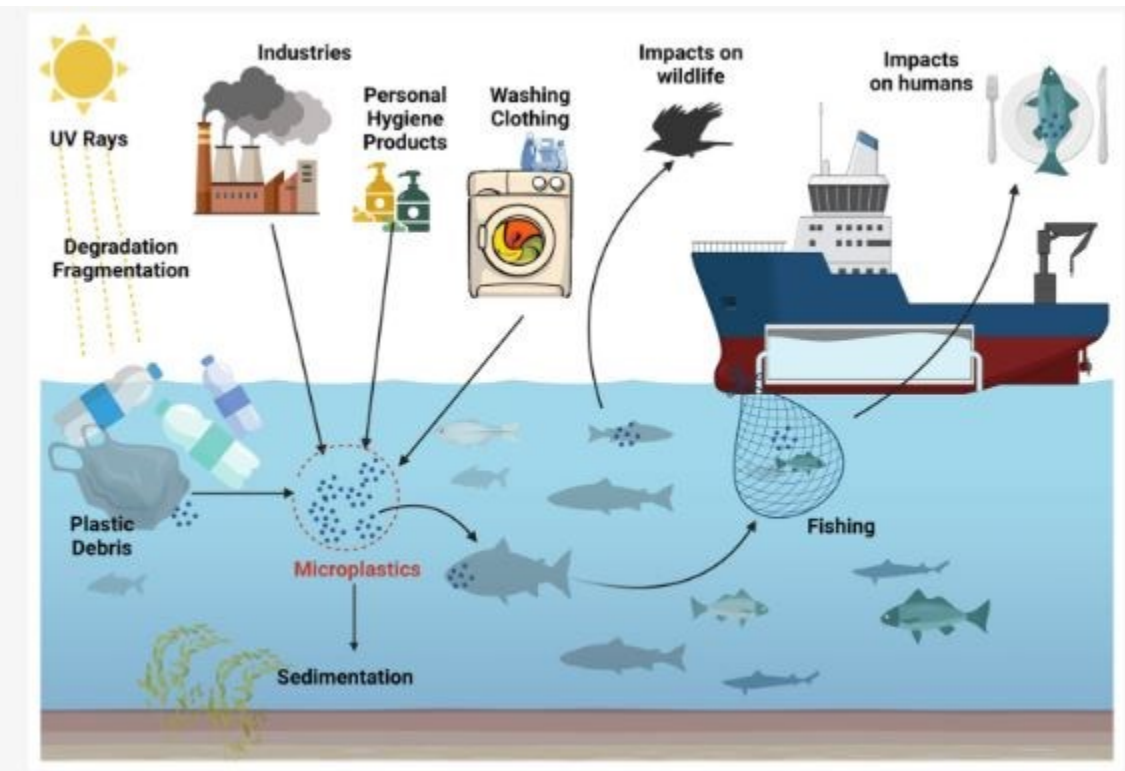
- ❖ **Ambiguity:** After the Union government banned single-use plastic in 2022, and recommended the adoption of biodegradable plastic, the question of **what exactly constituted biodegradable plastic was unanswered**.
- ❖ **The Central Pollution Control Board (CPCB)** refused to provide a **‘provisional certificate’** to licence the products as biodegradable because the CPCB only considers as biodegradable a plastic sample that has **90% degraded, and such a process takes at least two years**.

#### **Biodegradable and Compostable Plastics**

- ❖ **Biodegradable plastic** involves plastic goods being **treated before they are sold**.
  - ✓ When discarded, the **material is expected to decompose naturally** over time though there are no tests yet to determine if such plastics completely degrade.
- ❖ **Compostable plastics**, on the other hand, do degrade, but **require industrial or large municipal waste management facilities to do so**.
- ❖ Biodegradable plastic and compostable plastic are projected as the **two broad kinds of technological fixes** to India’s burgeoning problem of plastic waste pollution.

#### **What is Plastic and Microplastics?**

- ❖ The word plastic is derived from the Greek word **plastikos**, meaning **“capable of being shaped or moulded.”**
- ❖ Plastic refers to a **wide range of synthetic or semi-synthetic materials** that use **polymers** as a main ingredient with their defining quality being their **plasticity** – the ability of a solid material to undergo permanent deformation in response to applied forces.
  - ✓ This makes them extremely **adaptable, capable of being shaped as per requirement**.
- ❖ The basic building blocks of plastics are **monomers**, which are small molecules that can join together to form long chains called **polymers through a process called polymerization**.
- ❖ **Microplastics:** Plastics break down into their smaller units called **microplastics** – officially defined as plastics **less than five millimetres in diameter**.
  - ✓ These microplastics find their way across the planet, from the depths of the Pacific Ocean to the heights of the Himalayas.
  - ✓ According to the most recent global estimates, **an average human consumes at least 50,000 microplastic particles annually** due to contamination of the food chain, potable water, and air.



### Environmental Concerns of Microplastics

- ❖ **Marine Pollution:** Microplastics enter oceans through various pathways, including direct disposal, runoff from land, and fragmentation of larger plastic debris.
  - ✓ Marine organisms such as fish, seabirds, and marine mammals ingest microplastics, leading to physical harm, blockages in digestive systems, and potential transfer of toxins up the food chain.
- ❖ **Freshwater Contamination:** Microplastics are also found in freshwater environments, such as rivers, lakes, and streams.
- ❖ **Bioaccumulation and Biomagnification:** Microplastics have the potential to accumulate in the tissues of organisms through processes like ingestion and adsorption.
  - ✓ As predators consume prey containing microplastics, these contaminants biomagnify, reaching higher concentrations in organisms at the top of the food chain, including humans.
- ❖ **Habitat Degradation:** Microplastics presence interfere with nutrient cycling, sediment stability, and the behavior of organisms.
  - ✓ In some cases, microplastics create microenvironments that favor the growth of harmful bacteria or invasive species, further disrupting ecosystem dynamics.
- ❖ **Global Distribution:** Microplastics have been detected in diverse environments worldwide, including remote and pristine locations far from major sources of plastic pollution.
  - ✓ Their global distribution highlights the pervasive nature of plastic contamination and underscores the need for coordinated international efforts to address this issue.

### India's Efforts In Tackling Plastic Waste

- ❖ **Ban on single-use plastics:** India has banned the production, use, and sale of single-use plastics such as bags, cups, plates, cutlery, and straws in many states.
- ❖ **Extended Producer Responsibility (EPR):** The Indian government has implemented EPR, making plastic manufacturers responsible for managing and disposing of the waste generated by their products.
- ❖ **Plastic Waste Management Rules:** India introduced the Plastic Waste Management Rules in 2016, which provide a framework for managing plastic waste through various measures, including recycling and waste-to-energy initiatives.
- ❖ **Plastic Waste Management (Amendment) Rules, 2022:**



- ✓ The guidelines on **EPR(Extended Producer Responsibility)** coupled with the prohibition of identified single-use plastic items.
- ✓ It banned the manufacture, import, stocking, distribution, sale and use of carry bags made of virgin or recycled plastic less than seventy-five micrometers.
- ❖ **Swachh Bharat Abhiyan:** The Indian government launched the Swachh Bharat Abhiyan, a national cleanliness campaign, which includes the collection and disposal of plastic waste.
- ❖ **Plastic Parks:** Government has set up Plastic Parks, which are specialized industrial zones for recycling and processing plastic waste.
- ❖ **Beach clean-up drives:** The Indian government and various non-governmental organizations have organized beach clean-up drives to collect and dispose of plastic waste from beaches.
- ❖ **India is a signatory to MARPOL (International Convention on Prevention of Marine Pollution).**
- ❖ **The “India Plastic Challenge – Hackathon 2021**
  - ✓ It is a unique competition calling upon start-ups /entrepreneurs and students of Higher Education Institutions (HEIs) to develop innovative solutions to mitigate plastic pollution and develop alternatives to single-use plastics.

## CLIMATE FINANCE

**Context:** The role of the private sector in ‘climate finance’ has so far been somewhat of a blind spot.

### About Climate Finance

- ❖ Climate finance refers to **local, national or transnational financing**—drawn from **public, private and alternative sources of financing**—that seeks to support **mitigation and adaptation actions** that will address climate change.
- ❖ The Convention, the **Kyoto Protocol and the Paris Agreement** call for **financial assistance from Parties with more financial resources to those that are less endowed and more vulnerable.**

### Significance

- ❖ It is critical to addressing climate change because **large-scale investments** are required to significantly reduce emissions, notably in **sectors that emit large quantities of greenhouse gases.**
- ❖ It is equally important for adaptation, for which significant financial resources will be similarly required to allow societies and economies to **adapt to the adverse effects and reduce the impacts** of climate change.

### Global Position on Climate Finance & role of Private Sector

#### ❖ **Paris Pact for People and Planet:**

- ✓ Recently, more than 100 countries as well as representatives from global private sector entities gathered in Paris to affirm a single goal: No country should have to choose **between fighting poverty and fighting for the planet.**
- ✓ The Paris Pact for People and Planet proposed actions aimed at scaling up private capital flows to transform emerging and developing economies.

#### ❖ **Shift from billions to trillions:**

- ✓ Much discussion and controversy have focused on the public sector, especially the commitment by developed countries to **provide USD 100 billion** in climate finance **per year** between **2020 and 2025.**
  - This goal is now **expected to be met in 2023** for the first time.

### Challenges of private climate financing

#### ❖ **Underperformance of private sector:**

- ✓ **The OECD 2020 data** shows that the mobilisation of private climate finance has **underperformed against the expectations of developed countries**.
- ✓ The SCF (Standing Committee on Finance) report notes that **it is unclear**:
  - to what extent this was due to a **lower-than-expected potential to mobilise private finance** or
  - to a relatively **lower proportion of projects** with **mobilisation potential** in the overall climate finance portfolio.

❖ **Demands of developing countries:**

- ✓ Developing countries have for a long time insisted that a significant portion of climate finance **should come from public funds** as **private finance will not address their needs and priorities** especially related to **adaptation**.

❖ **Issues with adaptation priorities:**

- ✓ Adaptation is **unlikely to offer commercially profitable opportunities** for private financiers.
- ✓ Vulnerable, debt-ridden and low-income countries with poor credit ratings needing adaptation finance the most, find it challenging to access private finance.

❖ **Contradictory claims:**

- ✓ Many **developed countries and multilateral development banks** have emphasised the **importance of private finance** mobilised in their **climate finance strategies**, including by **de-risking** and creating enabling environments.
- ✓ According to the reports, these efforts have **not yielded results at the scale required** to tap into the significant potential for investments by the private sector and **deliver on developed countries' climate ambition**.

**Suggestions and Way Ahead**

❖ **Building & reviewing climate-finance architecture:**

- ✓ The need is to engage in a review of the global vertical climate funds in order to optimise the use of their resources.
- ✓ It is also needed to increase partnerships between peers and with the rest of the climate-finance architecture.

❖ **Structural requirements:**

- ✓ More **simplicity and consistency** in the rulebook is required to **lower risk and risk perception for global investors** who fund sustainable projects in developing countries.
- ✓ Providing the right signals and labels to invest in sustainable projects, maintaining a stable and transparent environment, and promoting investment opportunities are also essential.

❖ **Role of Credit-rating agencies:**

- ✓ Credit-rating agencies must be included in the reform agenda of **multilateral development banks (MDBs)**.
- ✓ Rating agencies should take into account the **innovative blended finance schemes** we are designing and **use the new data on actual defaults**.
- ✓ This new data shows that in many developing economies, contrary to most OECD countries, projects with good multilateral guarantees are less prone to default than companies, which are less likely to default than sovereigns.

❖ **Country-led, multi-actor partnerships:**

- ✓ There is a need to push further the thinking on the “green finance” framework to make the most of the global savings pool.

- The objective is to align the financial sector with the **objectives of the Paris Agreement**.
- ✓ In this respect, country-led, multi-actor partnerships such as Just Energy Transition Partnerships are the right way to raise the required investments.
- ✓ These partnerships are already operative in Indonesia, Vietnam, South Africa and Senegal.
  - We should do more with countries willing to phase out coal from their electricity mix.
- ❖ **Addressing debt vulnerabilities:**
  - ✓ Unlocking private sector finance for the green transition does not exonerate governments from addressing debt vulnerabilities in developing countries.
  - ✓ Too many **low-and middle-income countries** face unsustainable debt trajectories.
  - ✓ All **major creditors** in the region should now **avoid contributing further to debt vulnerability**.
- ❖ On many of these issues, India's G20 Presidency has enabled path breaking progress.
  - ✓ We now need to **jointly support the G20 Brazilian presidency** to bring this agenda to the finish line.
- ❖ **India has a crucial role to play** because of its economic size, but more than that, because of its unique capacity to build bridges rather than stir up divisions within the international community.
  - ✓ India's *Vasudhaiva Kutumbakam*, must guide our efforts to make the global financial system more efficient and more just.
- ❖ In order to address the overlapping challenges of poverty reduction, climate change and biodiversity protection, **we need a shift from billions to trillions** in global investments.

# CivilsTap Himachal



## Initiatives

**HPAS Comprehensive Course 2023**

**Salient Features of the Course**

- 300+ Lectures of GS and CSAT
- 4000 Pages Notes in PDF
- Test Series Prelims + Mains
- Current Affairs Videos + Notes
- Weekly Doubt Session Classes
- Mock Interview Sessions

**HPAS Offline/Live Course**

+91 7889296332  
**CivilsTap**  
www.civiltap.in

**HPAS MAINS CRASH COURSE**

**HPAS 2024 Online Batch**  
**Hindi Medium**

**HP ALLIED/NT OFFLINE/LIVE**

**Allied/NT Test Series**  
Prelims Mains

**Allied/NT Online Batch (Hindi Medium)**

**HPAS COMPREHENSIVE COURSE 2023**  
**HP PATWARI EXAM**

**HP TGT COMMISSION New Batch**

- Medical
- Non-Medical
- Arts & Commerce

**HP PGT COMMISSION**  
585 VACANCIES  
**New Batch**  
Paper - I & Paper - II

- Hindi
- English
- Physics
- Chemistry
- Biology
- Math's
- History
- Political Science

**CivilsTap**  
Quality & Affordable Education

**HPAS PRELIMS TEST SERIES**

Total No. of Tests	18	Sectional Tests	10
Full CSAT Mock Tests	04	Full GS Mock Tests	04
Total Number Of Questions	1800		

**HPAS MAINS TEST SERIES**  
**Total Tests 24**

(9 Sectional GS Tests, 9 Full Mock GS Tests, 2 Essay Tests, 4 Language Tests)

**Call:- +91 7814622609**