GROUP II&IIA MAINS CURRENT AFFAIRS

ADMINISTRATION AND POLITY	SOCIAL ISSUES
1. Uniform Civil Code	1. Manual Scavenging
2. One Nation One Election	2. Online gaming
3. Inter-state Council	3. NFHS-5
4. Rajya Sabha elections to Various states	4. The state of Inequality in India report
5. Anti-Defection Law	5. Surrogacy Regulation rules 2022
6. Election of President	6. Migration in India 2020-21 report
7. Election of Vice President	7. State Ranking Index for the National Food Security Index
8. powers of governor	8. Crime in India Report 2021
9. Constitution bench	9. PM-SHRI Schools
10 Collegium System	10. World's population report: UN population Fund Report
11. Pendency of Cases in Courts	11. SHRESHTHA
12. Live streaming of Supreme Court proceedings	12. PM-MITRA
13. 5 years of GST	13. Jal Jeevan Mission
14. Tamil Nadu Life Sciences policy 2022	14. Mission Vatsalaya
15. Tamil Nadu Research and Development policy 2022.	15. Mission shakthi
16 Tamil Nadu Aerospace and Defence policy 2022	16. SMILE-75
17. Tamil Nadu Footwear and Leather policy 2022	17. Personal Data Protection Bill
18. Care Scheme	18. SIRPI Scheme
19. TNCGS - Tamil Nadu Credit Guarantee Scheme	19. Ennum Ezhuthum Scheme
20. TANCOIR (Tamil Nadu Coir Business Development Corporation)	20. Pudhumai Penn Scheme
21. TN SC/ST startup fund	21. CM Morning Breakfast scheme
22. Kalaignarin All village Integrated Agriculture Development Programme	22. Thaghaisal Schools
23. Vaanavil mandram	23. NAMASTE
24. Manam Scheme	
25. Article 142 and Article 161.	
26. Kashi Tamil Sangamam	
27. Aadukalam App	

28. Human Development Index report 2022

29. India Innovation Index 2022

30. Social Progress Index 2022

SCIENCE AND TECHNOLOGY	ENVIRONMENT
1. PSLV C-52 Mission	1. Bio-diversities by 2030
2. PSLV C-53 Mission	2. State Energy & climate Index
3. P3LV C-54 Mission	3. National policy on biofuels -2018 - Amendment?
4. Gaganyan project	4. Ban on Single use plastics
5. Aditya L-1 Mission	5. Forest (Conservation) Rules 2022
6. James Web Space Telescope	6. India's Nationally Determined Contributions
7. DART Mission	7. Mission LIFE
8. Artemis Mission	8. COP 27
9. Liquid Mirror Telescope	9. Green Tamil Nadu Mission
10. Private sector Participation in space	10. TN Green climate Company
- INSPACE	11. TN Wetlands Mission
- NSIL	12. TN climate change Mission
- Antrix	13. Ramsar wetlands in Tamil Nadu
- Digantara	14. Nilgiris Tahr Conservation project
- Dhruva	15. E-waste management rules 2022
- Mission Parambh	
11. National Strategy on Blockchain	
12. Accelerate Vigyan	
13. Vigyan Sarvalva Pujyate	
14. Paramporul super computer	
- National Supercomputing Mission	
15. TiHAN	
16. Roshini	
12. SPARK program	
18. NAVIC	
19 Liquid Nano wrea Hydrogen	
20. National Hydrogen Mission	
21. COVID-19	

- Variants and Vaccines 22. INCOVACC 23. WHO- Global Centre for Traditional Medicine	

1. UNIFORM CIVIL CODE

➢ Article 44 of the Constitution lays down that the state shall endeavour to secure a UCC for the citizens throughout the territory of India.

Article 44 is one of the Directive Principles of State Policy (DPSP).

DPSP as defined in Article 37, are not justiciable (not enforceable by any court)

Indian laws do follow a uniform code in most civil matters such as Indian Contract Act 1872, Civil Procedure Code, Transfer of Property Act 1882, Partnership Act 1932, Evidence Act, 1872 etc.

States, however, have made hundreds of amendments and, therefore, in certain matters, there is diversity even under these secular civil laws.

➢ Implications of Uniform Civil Code on Personal Laws:
  ★ Protection to Vulnerable Section of Society
  ★ Simplification of Laws
  ★ Adhering to Ideal of Secularism
  ★ Gender Justice
➢ Challenges:
  ★ Exceptions in Central Family Laws
  ★ Communal Politics
  ★ Constitutional Hurdle

2. ONE NATION ONE ELECTION

The first General Elections to the House of People (Lok Sabha) and all State Legislative Assemblies were held simultaneously in 1951-52.

That practice continued in three subsequent General Elections held in the years 1957, 1962 and 1967.

However, due to the premature dissolution of some Legislative Assemblies in 1968 and 1969, the cycle got disrupted.

➢ Arguments For Simultaneous Election:
  ★ Incalculable Economic Costs of Elections
  ★ Policy Paralysis
  ★ Administrative Costs
➢ Arguments Against Simultaneous Elections
  ★ Federal Problem and Against Spirit of Democracy

★ Regional Parties at Disadvantage
★ Diminished Accountability

3. INTER-STATE COUNCIL

➢ One of the important recommendations of Sarkaria Commission was for establishing a permanent Inter-State Council (Article 263).

The inter-state council is a recommendatory body that has been empowered to investigate and discuss subjects of common interest between the Union and state(s), or among states.

It also makes recommendations for better coordination of policy.

It also deliberates on other matters of general interest to the states as may be referred by the chairman to the council.

The Council may meet at least thrice in a year.

➢ Functions:

To create a strong institutional framework to promote and support cooperative federalism in the country.

Facilitates consideration of all pending and emerging issues of Centre-state and inter-state relations.

4. RAJYA SABHA ELECTIONS TO VARIOUS STATES

➢ The Rajya Sabha, constitutionally the Council of States, is the upper house of the bicameral Parliament of India.

It has a maximum membership of 245, of which 233 are elected by the legislatures of the states and union territories using single transferable votes through open ballots, while the president can appoint 12 members for their contributions to art, literature, science, and social services.

Rajya Sabha Elections 2022: Unlike Lok Sabha elections, where members are elected directly by the people, the Rajya Sabha MPs are elected indirectly by the people, that is, by the MLAs.

Allocation of seats for Rajya Sabha is made on the basis of the population of each state.

➢ Members of the Rajya Sabha are elected through single transferable vote via open ballot. Members of a state's Legislative Assembly vote in the Rajya Sabha elections in what is called proportional representation with the single transferable vote (STV) system. Each MLA's vote is counted only once.

The tenure of a Rajya Sabha member is six years. One-third members retire every second year and are replaced by newly chosen members.

Each member serves for a term of six years. In case of death, disqualification or resignation, bypolls shall held.

5. ANTI-DEFECTION LAW

The Tenth Schedule - popularly known as the Anti-Defection Act - was included in the Constitution via the 52nd Amendment Act, 1985. (Article 102 & Article 191)

It sets the provisions for disqualification of elected members on the grounds of defection to another political party.

The 91st Constitutional Amendment Act, 2003, changed this and now at least two-thirds of the members of a party must be in Favour of a "merger" for it to have validity in the eyes of the law.

➢ Grounds for Defection:

  ➢ Voluntary Give Up:

  If an elected member voluntarily gives up his membership of a political party.

  ➢ Violation of Instructions:

  If he votes or abstains from voting in such House contrary to any direction issued by his political party or anyone authorized to do so, without obtaining prior permission.

  As a pre-condition for his disqualification, his abstention from voting should not be condoned by his party or the authorized person within 15 days of such incident.

  ➢ Elected Member:

  If any independently elected member joins any political party.

  ➢ Nominated Member:

  If any nominated member joins any political party after the expiry of six months.

6. ELECTION OF PRESIDENT

The 2022 Indian presidential election was the 16th presidential election in India which was held in 2022 to elect the president of India. The election took place on 18 July 2022 with a turnout of 99.12%.

➢ Droupadi Murmu won the election, defeating Yashwant Sinha, the candidate of the opposition, by a margin of 296,626 votes.

That led Murmu to be the 15th President of India, the first tribal and second woman to do so. She is also the first President to be born after independence and is the youngest to occupy the top post.

➢ Electoral system:

The manner of election of the President is provided by Article 55 of the Constitution.

The President of India is indirectly elected by an electoral college consisting of the elected members of both houses of parliament, the elected members of the legislative assemblies of the 28 states and the elected members of the legislative assemblies of the union territories of Delhi, Puducherry and Jammu and Kashmir

7. ELECTION OF VICE PRESIDENT

The elections for the 14th vice president of India was held on 6 August 2022.
The winner of this election is Jagdeep Dhankhar who replaced Venkaiah Naidu as Vice President

➢ Jagdeep Dhankhar won the election by 528 votes defeating the United Opposition candidate Margaret Alva.

➢ Electoral system:

The Vice-President is elected by an electoral college consisting of members of both Houses of Parliament, in accordance with the system of proportional representation by means of the single transferable vote and the voting in such election is by secret ballot.

The Electoral College to elect a person to the office of the Vice-President consists of all members of both Houses of Parliament.

8. POWERS OF GOVERNOR

> Article 153 says that there shall be a Governor for each State. One person can be appointed as Governor for two or more States.

A Governor is appointed by the President and is a nominee of the Central Government.

He is the constitutional head of the state, bound by the advice of his Council of Ministers (CoM).

He functions as a vital link between the Union Government and the State Government.

Governor has the power to grant pardons, reprieves, etc. (Article 161).

There is a CoM with the CM at the head to aid and advise the Governor in the exercise of his functions, except some conditions for discretion. (Article 163).

The Governor appoints the Chief Minister and other Ministers (Article 164).

Governor assents, withholds assent, or reserves the bill for the consideration of the President passed by the Legislative Assembly (Article 200, 201).

Governors may promulgate the Ordinances under certain circumstances (Article 213).

9. CONSTITUTION BENCH

> Constitution bench is the name given to the benches of the Supreme Court of India.

It consists of at least five judges of the court which sit to decide any case "involving a substantial question of law as to the interpretation" of the Constitution of India or "for the purpose of hearing any reference" made by the President of India under Article 143.

This provision has been mandated by Article 145 (3) of the Constitution of India.

The Chief Justice of India has the power to constitute a Constitution Bench and refer cases to it.

10. COLLEGIUM SYSTEM

> Article 124: Establishment and constitution of Supreme Court say that:
> There shall be a Supreme Court of India consisting of a Chief Justice of India and, until Parliament by law prescribes a larger number, of not more than seven other Judges.
>> First judges case, 1982
>> Second judges case,1993 - Birth of collegium system
>> Third Judges Case, 1998 - The chief justice won't be the only one as a part of the consultation process. Consultation would include a collegium of 4 senior-most judges of the Supreme court.
>> National Judicial Appointment Commission Act, 2014

Recently, The Supreme Court has been repeatedly conveying to the government its growing concerns about the judicial vacancies in High Courts.

11. PENDENCY OF CASES IN COURTS

> Pendency of court cases in India is the delay in the disposal of cases (lawsuits) to provide justice to the aggrieved person or organisation by judicial courts at all levels.

In 2022, the total number of pending cases of all types and at all levels rose to 50 million or 5 crores.

4.3 crore out of 5 crore cases, i.e more than 85% cases, are pending in district courts as of December 2022.

Government itself is the biggest litigant, having 50% of the pending cases being sponsored by the state.

India has the largest number of pending court cases in the world.

According to a 2018 Niti Aayog strategy paper, at the then-prevailing rate of disposal of cases in our courts, it would take more than 324 years to clear the backlog.

Pendency of cases cost 1.5%-2% of India's GDP.

12. LIVE STREAMING OF SUPREME COURT PROCEEDINGS

➢ Recently, the Supreme Court (SC) decided to live stream its proceedings in crucial Constitution Bench cases that will be heard from 27th September, 2022.

The Supreme Court in Swapnil Tripathi vs Supreme Court of India (2018) had ruled in favour of opening up the apex court through live-streaming.

It held that the live streaming proceedings are part of the right to access justice under Article 21.

Gujarat High Court was the first high court to livestream court proceedings followed by Karnataka high court.

13. 5 YEARS OF GST

➢ GST, India's most transformational tax reform in recent times, celebrated its 5th anniversary on 1 July 2022.

Some of the primary problems with the pre-GST tax regime were:
★ Taxation at manufacturing level
★ Exclusion of Services
★ Tax Cascading
★ Complexity in determining the nature of transaction
★ Complexity
★ Lack of uniformity in VAT provisions and rates
★ Local Sale v/s Central Sale
★ Interpretational Issues

GST - Goods and Services Tax (GST) is an indirect tax (or consumption tax) used in India on the supply of goods and services.

It is a comprehensive, multistage, destination-based tax.

Five different tax slabs for collection of tax: 0%, 5%, 12%, 18% and 28%.

➢ The tax came into effect from 1 July 2017 through the implementation of the One Hundred and First Amendment of the Constitution of India.

14. TAMIL NADU LIFE SCIENCES POLICY 2022

Life Sciences is a broad, multi-faceted industry that, in the most general sense, deals with the investigation of living things.

It includes a range of more specific scientific fields, like microbiology, zoology, biochemistry, cell biology, evolutionary biology, anatomy, biophysics, epidemiology, marine biology, genetics, botany, ecology and more.

- ➢ Vision:

   Transform Tamil Nadu into an attractive destination for manufacturers in Life Sciences to invest, innovate and create Life Sciences products.

- ➢ Mission:
  - ★ Transform Tamil Nadu into an attractive destination for manufacturers in Life Sciences to invest, innovate and create Life Sciences products.
  - ★ Transform Tamil Nadu into the most preferred destination for researchers in biologics, biosimilars, and medical technology.
  - ★ Enhance the existing ecosystem by making it more conducive for the units to operate, produce and move higher in the value chain.
  - ★ Improve ease of doing business for Life Sciences firms.
  - ★ Build local production capacities and increase import substitution of Biologics and Biosimilars products, and cutting-edge medical equipment.

- ➢ Goal:

   Given the needs and aspirations of the State, the Government of Tamil Nadu shall strive to attract Rs. 20,000 crores of investment in Life Sciences and generate 50,000 jobs.

- ➢ Need for a New Policy:
  - ★ Biotechnology and Bio-Services
  - ★ Medical Devices
  - ★ Pharmaceutical and Nutraceutical Industry
  - ★ Medical Textiles

15. TAMIL NADU RESEARCH AND DEVELOPMENT POLICY 2022.

   Research & Development (R&D) enables innovation in developing new knowledge, techniques, and technologies that increase productivity and consequently spur long-run economic growth globally.

   Tamil Nadu is among the top three states in India in R&D, and has evolved into a human capital hub that services not only the nation but also the world.

Advantage Tamil Nadu:

   Tamil Nadu is one of the most advanced and admired economies in India. It offers a host of advantages in terms of human capital, knowledge and research infrastructure, diversified economy, and favourable investment climate.

- ➢ Vision:

   Transform Tamil Nadu into a knowledge-based economy by 2030, driving manufacturing and service excellence.

- ➢ Mission:
  - ★ Increase the inputs to R&D, including the number of researchers and scientists
  - ★ Increase the outputs for innovation, such as patents and publications.
  - ★ Develop a synergetic innovation ecosystem of research parks, research centres, centres of excellence, and innovation hubs.
  - ★ Promote R&D in private sector by targeting new indigenous R&D performing firms in both manufacturing and service sectors such as GCCs, stimulating greater R&D investment in R&D performing firms, encouraging firms that do not yet perform R&D, and supporting public-private collaboration in R&D centres and GCCs.

- ➢ Goals:

To double the R&D expenditure in the State from the Government, Higher Education, & Private Sector by 2030.

➢ Need for the Policy

Long-run per capita economic growth is driven by productivity growth, which in turn is driven by investments in education and research, and competition in product markets. The State recognizes the complexities in the innovation process and increasing competition; this furthers the need for a separate R&D policy.

➢ Scope of this Policy:

The scope of this Policy shall be limited to R&D projects undertaken by private companies and research institutes independently, or in partnership with private companies that are in Focus and Sunrise Sectors, and are aligned to the Grand Challenges.

➢ Grand Challenges:

1) Clean Energy
2) Sustainable and Advanced Manufacturing
3) Health, Well-being, and Life Sciences
4) Future of Mobility
5) Digital and Data Economy

16. TAMIL NADU AEROSPACE AND DEFENCE POLICY 2022

Tamil Nadu is an industrial powerhouse of India with a very strong and diverse industrial base. Tamil Nadu is the State with the highest number of factories and industrial workers in the country. It is also a leader in terms of industrial output. Tamil Nadu has a highly developed industrial ecosystem and is very strong in sectors.

The Government of Tamil Nadu is determined to further accelerate the geographically balanced and environmentally sustainable industrialization of the State and to foray into more technologically complex sectors like aerospace and defence manufacturing.

➢ Vision:

To make Tamil Nadu the preferred destination to invest, innovate and create products and services in the Aerospace and Defence sector.

➢ Mission:

★ Creating a robust, world-class, high technology, efficient Aerospace & Defence (A&D) manufacturing ecosystem.
★ Attracting global OEMs and Tier-1 suppliers and Indian majors as anchor units in the State by providing the required facilitation and support.
★ Fostering the innovation ecosystem focussing on the Aerospace &
★ Defence sector by development of innovation centres, start-up hubs, to make Tamil Nadu the foremost innovation hub of India.
★ Foster growth of companies in Tamil Nadu which support the selfreliance vision of the Nation in Aerospace and Defence
★ Channelizing the State's strengths in automobile, electronics, precision manufacturing, heavy engineering, textile and related sectors to support the evolution of A&D ecosystem.

➢ Goal:

Attracting investments to the tune of INR 75,000 Crore (USD 10 Bn) over a period of 10 years.

Creating direct & indirect employment prospects for nearly 1 lakh (0.1 million) persons in 10 years.

17. TAMIL NADU FOOTWEAR AND LEATHER POLICY 2022

The art and industry of leather-making is timeless. The oldest records of Tamil Nadu's tryst with leather-making date back to the Sangam Age in 500 BC, when tanned leather was used for armour, covers of music instruments, travel cases and footwear.

Consequently, Tamil Nadu has emerged as a natural leader in the footwear segment, contributing 26% to the national output.

Production of leather and leather products in hubs like Chennai, Ambur, Ranipet, Vaniyambadi, Trichy, and Dindigul and established parks for footwear manufacutring such as Cheyyar and Bargur.

➢ Scope of the Policy:

Tamil Nadu Footwear and Leather Products Policy 2022 shall cover manufacturing units under the following three broad segments

1. Footwear
2. Leather Products
3. Footwear and Leather Products Design Studios

➢ Vision:

Transform Tamil Nadu into the most favoured destination for manufacturing of Footwear and Leather Products in Asia.

➢ Goals:

Attract Rs. 20,000 crores investment in Footwear and Leather Products manufacturing.
Attract 2,00,000 jobs in the footwear segment.

➢ Mission:
- ★ Create a conducive ecosystem and resilient supply chain for footwear manufacturing by supporting infrastructure in terms of clusters, parks and common facilities.
- ★ Enhance the Non-Leather Footwear and Component ecosystem by supporting the ancillary units.
- ★ Boost and upskill the labour supply in Footwear and Leather Products manufacturing through dedicated skilling programs.
- ★ Encourage exports of Footwear and Leather Products, especially the export of Non-Leather Footwear.

18. CARE SCHEME

➢ COVID Assistance and Relief to Entrepreneurs (Care):

Micro, Small and Medium Entrepreneurs (MSMEs) in Tamil Nadu that were impacted during the Covid-19 have been invited to apply for the subsidy-linked assistance under COVID Assistance and Relief to Entrepreneurs (Care).

The new scheme shall consist of two components - Care 1 and Care 2.

➢ During 2020-21 and 2021-22 entrepreneurs who were commercially hit by Covid can come forward on their own under CARE 1 plan.

They can get 25 per cent or a maximum of Rs 25 lakh subsidy on machineries but the ceiling for the project estimate should be Rs 5 crore.

The applicant should be within 55 years of age with a Plus Two qualification.

➤ Under CARE 2 plan, MSME unit, affected during COVID, can seek assistance for technical upgradation or modernisation with 25 per cent subsidy with a maximum subsidy of Rs 25 lakh on the cost of machineries.

19. TNCGS - TAMIL NADU CREDIT GUARANTEE SCHEME

The plan calls on the government to make loans available to micro, small, and medium-sized enterprises (MSMEs) so that they may continue operating their businesses.
Micro, small, and medium-sized businesses would be eligible for loans of up to 40 lakh from this organization.

To offer monetary assistance to the state's micro, small, and medium-sized business sector. A budget of Rs. 100 crores for this scheme.

➤ Objective:

This scheme is designed with the aim of providing loans and other forms of financing to micro, small, and medium-sized enterprises (MSMEs).

There would be a reduced requirement for a security deposit in order for such businesses to have their loan applications approved.

➤ Benefits:

The scheme will provide collateral-free loans for starting businesses without the fear of default.

To help in the development of micro, small, and medium enterprises.

20. TANCOIR (TAMIL NADU COIR BUSINESS DEVELOPMENT CORPORATION)

➤ Tamil Nadu CM inaugurated Tamil Nadu Coir Business Development Board at a cost of Rs.5 crore in Coimbatore district on 25.08.2022.

Coimbatore district has 88,000 to 90,000 acres of coconut farmers.

This is a rare project that can increase the production of coconut and improve the livelihood of the farmers by increasing the area of coconut cultivation through this development company which has been started now.

21. TN SC/ST STARTUP FUND

➤ An exclusive fund to support Startups by SC/ST entrepreneurs

TN SC/ST Startup Fund is an initiative of the Government of Tamilnadu with the objective to invest in innovative and scalable Startups conceptualized and run by entrepreneurs from the Scheduled Caste/Scheduled Tribe communities.

The investment will be made in the form of equity or debt based on the evaluation and recommendation of the Investment Committee.

The first batch of evaluations will cover proposals received till 30th June 2022.

22. KALAIGNARIN ALL VILLAGE INTEGRATED AGRICULTURE DEVELOPMENT PROGRAMME

➢ OBJECTIVES

To bring fallow lands under cultivation and increase the cultivable area by creation of new water sources.

To increase the agricultural production and productivity.

To increase the economic status of farmers.

➢ FUNDING PATTERN

Community water source creation - State Plan Scheme (100%)

Other dovetailed components from various Union Government shared schemes like, SMAM, NADP, PM-KUSUM, PMKSY- PDMC - SWMA following the respective scheme operational guidelines and funding pattern.

➢ PROJECT AREA

1997 villages identified by RD and PR department under the scheme of Anaithu Grama Anna Marumalarchi Thittam (except Chennai and The Nilgiris District).

➢ WORK COMPONENTS IMPLEMENTED

1. Creation of water source (Borewell/Tubewell) for identified cluster in non-irrigated areas on community basis.

2. Creation of water source (Borewell/Tubewell) for individual SC/ST farmers.

3. Construction of Farm Ponds.

4. Desilting and Improvement works of Panchayat union tanks, Ooranies, Ponds and Supply channels

"The program is to bring economic development to rural areas by integrating the services of all the departments concerned".

The Programme would be implemented in all 12,525 village panchayats across the State during five years.

23. VAANAVIL MANDRAM

Tamil Nadu Vanavil Mandram Scheme 2023

➢ Vanavil Mandram (Rainbow forum) is a unique initiative to foster scientific interest among school students.

The new Vanavil Mandram Scheme was launched by Tamil Nadu Chief Minister on 28 November 2022.

It is aimed at promoting interest among the students of standards 6 to 8 to learn Science Technology Engineering and Mathematics (STEM).

Also, the Chief Minister flagged off 100 mobile science and mathematics laboratories on behalf school's Education department to stimulate the scientific temper among students.

They would teach students science experiments and mathematics, on a monthly basis, with proper guidance, and display science tools made by students.

Vanavil Mandram scheme will be implemented at an estimated cost of Rs. 25 crore to benefit 25 lakh government school students.

24. MANAM SCHEME

➢ Tamil Nadu Chief Minister launched the Mananala Nallaatharavu Mandram (MaNaM) Scheme on December 22, 2022.

This is regarded as an initiative of the State government concerning the mental health of medical college students by providing psychological support.

Tamil Nadu Govt puts forward the MaNam initiative for the psychological health of medical college students.

The plan aims to prevent suicidal tendencies among the youth. Further, it targets to resolve mental health issues faced by the young generation across the state.

Objective is to deal effectively with mental health issues in all 36 government medical colleges available across the State.

25. ARTICLE 142 AND ARTICLE 161

➢ Recently, the Supreme Court has invoked its extraordinary powers to do complete justice under Article 142 of the Constitution and ordered the release of A.G. Perarivalan in former Prime Minister Rajiv Gandhi assassination case.

➢ Article 142 provides discretionary power to the Supreme Court as it states that the Supreme Court in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it.

➢ Article 161 provides that the Governor of a State shall have the power to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence against any law relating to a matter to which the executive power of the State extends.

In the early years of the evolution of Article 142, the general public and the lawyers both lauded the Supreme Court for its efforts to bring complete justice to various deprived sections of society or to protect the environment.

26. KASHI TAMIL SANGAMAM

➢ Prime Minister of India inaugurated the month-long Kashi Tamil Sangamam in Varanasi, Uttar Pradesh.

This programme is an initiative by Government of India as a part of "Azadi ka Amrit Mahotsav" and to uphold the Spirit of Ek Bharat Sreshtha Bharat .

Kashi Tamil Sangamam celebrates many aspects of the historical and civilisational connection between India's North and South.

The broader objective is to bring the two knowledge and cultural traditions (of the North and South) closer, create an understanding of our shared heritage and deepen the people-to-people bond between the regions.

It is being organized by the Ministry of Education in collaboration with other ministries.

IIT Madras and Banaras Hindu University (BHU) are the two implementing agencies for the programme.

- ➢ Cultural Significance:
  - ★ King Parakrama Pandya, who ruled over the region around Madurai in the 15th century, wanted to build a temple to Lord Shiva, and he travelled to Kashi (Uttar Pradesh) to bring back a lingam.
  - ★ While returning, he stopped to rest under a tree — but when he tried to continue his journey, the cow carrying the lingam refused to move.
  - ★ Parakrama Pandya understood this to be the Lord's wish, and installed the lingam there, a place that came to be known as Sivakasi, Tamil Nadu.
  - ★ For devotees who could not visit Kashi, the Pandyas had built the Kasi Viswanathar Temple in what is today Tenkasi in southwestern Tamil Nadu, close to the state's border with Kerala.

27. AADUKALAM APP

- ➢ Official mobile application of Sports Development Authority of TamilNadu for players, public and coaches.

  Same application can be used through the website tnsports.org.in.

  This application called also Aadukalam.

  Tamil Nadu CM launched the sports information center named Adukalam in Chennai.

  All sports competitions, training camps, employment allocation for sportspersons and other sports-related details can be known through this application.

28. HUMAN DEVELOPMENT INDEX REPORT 2022

- ➢ Human Development Report 2021-22, India's rank on the Human Development Index (HDI) has slipped from 130 in 2020 to 132 in 2022, in line with a global fall in HDI scores in the wake of the Covid-19 pandemic.

  published by the United Nations Development Programme (UNDP).
- ➢ Goal: The goal is to contribute toward the expansion of opportunities, choice and freedom.
- ➢ Theme: The theme for Human Development Report 2021-22 is Uncertain Times, Unsettled Lives: Shaping our Future in a World in Transformation.
- ➢ HDI is a composite index that measures average achievement in human development taking into account four indicators:
  - ★ Life expectancy at birth
  - ★ Expected years of schooling
  - ★ Mean years of schooling
  - ★ Gross national income

  India's HDI value stood at 0.633 in 2021, which was lower than the world average of 0.732.

  Life expectancy: In 2021, India's life expectancy at birth was recorded at 67.2 years.

  Schooling: Expected years of schooling at 11.9 years, mean years of schooling at 6.7 years,

  Gross National Income: The gross national income per capita stood at USD 6,590.

29. INDIA INNOVATION INDEX 2022

> Prepared by NITI Aayog and the Institute for Competitiveness, the India Innovation Index is a comprehensive tool for the evaluation and development of the country's innovation ecosystem.

It ranks the states and the union territories on their innovation performance to build healthy competition amongst them.

> Karnataka has bagged the top rank in NITI Aayog's India Innovation Index, 2022.

Manipur secured the lead in the Northeast and Hill States category, while Chandigarh was the top performer in the Union Territories and City States category.

Karnataka was followed by Telangana, Haryana, Maharashtra and Tamil Nadu.

Chhattisgarh, Odisha, Bihar and Gujarat were at the bottom of the index.

30. SOCIAL PROGRESS INDEX 2022

> Social Progress Index (SPI) for States and Districts made by the Institute for Competitiveness and Social Progress Imperative was submitted to Economic Advisory Council- Prime Minister.

SPI is a comprehensive tool that can serve as a holistic measure of a country's social progress at the national and sub-national levels.

The index assesses states and districts based on 12 components across three critical dimensions of social progress - Basic Human Needs, Foundations of Wellbeing, and Opportunity.

> Highest SPI Score: Puducherry
> Lowest SPI Score: Jharkhand and Bihar

Tamil Nadu has achieved the highest component score for Opportunity dimension.

SOCIAL ISSUES

1. Manual Scavenging

❖ Manual scavenging is defined as "the removal of human excrement from public streets and dry latrines, cleaning septic tanks, gutters and sewers".

❖ **Reasons for the Prevalence**:
> Indifferent Attitude
> Issues due to Outsourcing
> Social Issue – Caste system

❖ **Government Measures:**
> National Commission for Safai Karamcharis (NCSK)
> Prevention of Atrocities Act, 1989
> The Building and Maintenance of Insanitary Latrines Act of 2013

> ➤ The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013
> ➤ Swachhta Abhiyan App
> ➤ Safaimitra Suraksha Challenge

Ministry of Social Justice and Empowerment informed that a total of **971 people lost their lives** while cleaning sewers or septic tanks since 1993.

According to recent official data, 42,000 of the 43,797 identified manual scavengers are Dalits or Scheduled Castes (SC) members.

2. Online gaming

- ❖ An online game is a video game that is either partially or primarily played through the Internet or any other computer network available.

India has the second largest number of gamers after South Korea.

In states like **Tamil Nadu**, Rajasthan, Telangana online game restrictions have already been implemented.

However, state high courts overruled them because a total ban would be unfair to games of skill.

During the budget session, the Online Gaming (Regulation) Bill, 2022 was presented in Lok Sabha as a Private Member's Bill.

- ❖ **Issues involve online gaming:**
  - ➤ Physical and psychological harm
  - ➤ Problem of betting and gambling
  - ➤ Serious health issues like obesity, vision problems, arm injuries, anxiety, stress, disruption of sleep
  - ➤ Impact the educational performance of children and youth
  - ➤ Increase the violence against women and children through online
  - ➤ Risks of cyber-attacks, privacy issues, data mining, identity theft, financial fraud during game transactions.
  - ➤ Rising suicides and depression among youths

Earlier Tamil Nadu government enacted the **Tamil Nadu Gaming and Police Laws (Amendment) Act** to ban online gaming, a part of which was struck down by the Madras High Court last year as it did not distinguish between games of skill and chance.

Later, the state government appointed a committee under the chairmanship of former Madras High Court judge, **Justice K. Chandru.**

Based upon the recommendations of the said committee, the government promulgated the **Tamil Nadu Prohibition of Online Gambling and Regulation of Online Games Ordinance, 2022**.

Later Tamil Nadu State legislative assembly passed the **Tamil Nadu Prohibition of Online Gambling and Regulation of Online Games Bill, 2022** which under waiting for governor assent.

3. NFHS-5 (2019-2021)

- ❖ **National Family Health Survey (NFHS)** is a large-scale, multi-round survey conducted in a representative sample of households throughout India.

It comprises detailed information on key domains of population, health and family welfare and associated domains.

- ❖ **Conducted By:**

The Ministry of Health and Family Welfare **(MoHFW)** has designated the International Institute for Population Sciences (IIPS) Mumbai.

❖ **Objective:**

The main objective of successive rounds of the NFHS has been to provide reliable and comparable data relating to health and family welfare and other emerging areas in India.

❖ **Total Fertility Rate (TFR):**

It has further declined from 2.2 to 2.0 at the national level.

only five states in India which are above replacement level of fertility of 2.1. These states are Bihar, Meghalaya, Uttar Pradesh, Jharkhand and Manipur.

❖ **Under Age Marriages:**

NFHS-5, 23.3% women surveyed got married before attaining the legal age of 18 years, down from 26.8% reported in NFHS-4.

❖ **Domestic Violence Against Women:**

Domestic violence has come down marginally from 31.2% in 2015-16 to 29.3% in 2019-21.

❖ **Institutional Births:**

It increased from 79% to 89% in India.

❖ **Stunting:**

The level of stunting among children under five years has marginally declined from 38% to 36% in the country.

❖ **Obesity:**

At the national level, it increased from 21% to 24% among women and 19% to 23% among men.

❖ **Sex Ratio:**

NFHS-5 data shows that there were 1,020 women for 1000 men in the country in 2019-2021.

❖ **Immunization:**

Full immunization drive among children aged 12-23 months has recorded substantial improvement from 62% to 76% at all-India level.

❖ **Family Planning**:

Overall Contraceptive Prevalence Rate (CPR) has increased substantially from 54% to 67% at all-India level.

❖ **Anaemia:**

The incidence of anaemia in under-5 children (from 58.6 to 67%), women (53.1 to 57%) and men (22.7 to 25%) has worsened in all States of India (20%-40% incidence is considered moderate).

4. The state of Inequality in India report

❖ 'State of Inequality in India' Report was released by the **Economic Advisory Council to the Prime Minister (EAC-PM).**

The report compiles information on inequities across sectors of health, education, household characteristics and the labour market.

Inequities in these sectors make the population more vulnerable and trigger a descent into multidimensional poverty.

Five Key Areas: These are income distribution, labour market dynamics, health, education and household characteristics.

The report is based on the data derived from various rounds of the Periodic Labour Force Survey (PLFS), National Family and Health Survey (NFHS) and United Information System for Education Plus.

❖ **Key Highlights:**

➢ **Wealth Concentration:**

Urban areas have a 44.4% wealth concentration in the highest quintile (20%) compared to a meager 7.1% concentration in rural areas.

➢ **Unemployment Rate:**

India's unemployment rate is 4.8% (2019-20), and the worker population ratio is 46.8%.

➢ **Health Infrastructure:**

In the area of health infrastructure, there has been a considerable improvement in increasing the infrastructural capacity with a targeted focus on rural areas

➢ **School Toilets:**

By 2019-20, 95% of schools would have functional toilet facilities on the school premises (95.9% functional boy's toilets and 96.9% functional girl's toilets).

➢ **Education:**

The Gross Enrolment Ratio has also increased between 2018-19 and 2019-20 at the primary, upper primary, secondary and higher secondary.

➢ **Health:**

The results of NFHS-4 (2015-16) and NFHS-5 (2019-21) have shown that 58.6% of women received antenatal check-ups in the first trimester in 2015-16, which increased to 70% by 2019-21.

5. Surrogacy Regulation rules 2022

❖ Surrogacy is an arrangement in which a woman (the surrogate) agrees to carry and give birth to a child on behalf of another person or couple (the intended parent/s).

❖ **Types:**

➢ Altruistic surrogacy:

It involves no monetary compensation to the surrogate mother other than the medical expenses and insurance coverage during the pregnancy.

➢ Commercial surrogacy:

It includes surrogacy or its related procedures undertaken for a monetary benefit or reward (in cash or kind) exceeding the basic medical expenses and insurance coverage.

The ART (Assisted Reproductive Technology Act) Regulation 2021 provides a system for the implementation of the law on surrogacy by setting up of the National Assisted Reproductive Technology and Surrogacy Board.

Surrogacy (Regulation) Rules, 2022:

The intending woman or couple shall purchase a general health insurance coverage in favour of surrogate mother for a period of thirtysix months from an insurance company or an agent recognized by the Insurance Regulatory and Development Authority.

Surrogacy Act Provisions:

Under the Surrogacy (Regulation) Act, 2021, a woman who is a widow or a divorcee between the age of 35 to 45 years or a couple, defined as a legally married woman and man, can avail of surrogacy if they have a medical condition necessitating this option.

It also bans commercial surrogacy, which is punishable with a jail term of 10 years and a fine of up to Rs 10 lakhs.

The law allows only altruistic surrogacy where no money exchanges hands and where a surrogate mother is genetically related to those seeking a child.

❖ **Challenges:**
  ➢ Exploitation of the Surrogate and the Child
  ➢ Reinforces Patriarchal Norms
  ➢ Denies Legitimate income to Surrogates
  ➢ Emotional Complications
  ➢ No Third-Party Involvement

6. Migration in India 2020-21 report

❖ The '**Migration in India' report,** which is based on first-time collection of additional data during the annual round of Periodic Labour Force Survey for July 2020-June 2021.

It is released by the **Ministry of Statistics and Programme Implementation (MoSPI).**

Temporary visitors have been defined as the ones who arrived in households after March 2020 and stayed continuously for a period of 15 days or more but less than 6 months.

Migrants have been defined as those, for whom the last usual place of residence, any time in the past, is different from the present place of enumeration.

After the onset of the Covid-19 pandemic in March 2020, 0.7 per cent of the country's population was a temporary visitor in households during July 2020-June 2021.

  ➢ The All-India Migration rate was 28.9 per cent in July-June 2020-21, with:
    (26.5% in rural areas, 34.9% in urban)
  ➢ Females recorded a higher share of migration rate of 47.9 percent.
    (48% in rural, 47.8% in urban)
    Reason for migration: Among females, the highest level of migration rate was seen at 86.8 percent for marriage.
  ➢ The migration rate for males was seen at 10.7 per cent.
    (5.9% in rural, 22.5% in urban)
    Reason for migration: Males migrated in search of employment, to take up better employment, business etc.

7. State Ranking Index for the National Food Security Index

❖ The first edition of the 'State Ranking Index for NFSA' released on July 5, 2022.

Released by **Ministry for Consumer Affairs, Food & Public Distribution.**

❖ **Odisha** is at the first position in this index.

To document the status and progress of implementation of NFSA and various reform initiatives across the country, post consultation with states.

  ❖ Uttar Pradesh is ranked second in the entire country.
    Andhra Pradesh is third places
  ❖ Tamil Nadu got 9th Position

Tripura ranks first among special category states/UTs

The index for ranking of States and UTs is built on three key pillars, which cover end-to-end implementation of NFSA through TPDS. These pillars are- i) NFSA- coverage, targeting and provisions of the Act, ii) delivery platforms, and iii) nutrition initiatives.

The findings from the exercise revealed that most states and union territories have fared well in digitization, Aadhaar seeding, and e-PoS installation, which reiterates the strength and scale of the reforms.

❖ The **National Food Security Act (NFSA)** was enacted on July 5, 2013.

➢ **Objective:**

To provide for food and nutritional security in the human life cycle approach, by ensuring access to adequate quantities of quality food at affordable prices to people to live a life with dignity.

➢ **Coverage:**

75% of the rural population and upto 50% of the urban population for receiving subsidized foodgrains under Targeted Public Distribution System (TPDS).

Overall, NFSA caters to 67% of the total population.

➢ **Eligibility:**

Priority Households to be covered under TPDS, according to guidelines by the State government.

Households covered under existing Antyodaya Anna Yojana.

➢ **Provisions:**

5 Kgs of foodgrains per person per month at Rs. 3/2/1 per Kg for rice/wheat/coarse grains.

The existing AAY household will continue to receive 35 Kgs of foodgrains per household per month.

Meal and maternity benefit of not less than Rs. 6,000 to pregnant women and lactating mothers during pregnancy and six months after the child birth.

Meals for children up to 14 years of age.

8. Crime in India Report 2021

❖ NCRB was set-up in 1986 to function as a repository of information on crime and criminals so as to assist the investigators in linking crime to the perpetrators based on the recommendations of the Tandon Committee, National Police Commission (1977-1981) and the MHA's Task force (1985).

Subsequently, NCRB was entrusted with the responsibility for monitoring, coordinating and implementing the Crime and Criminal Tracking Network & Systems (CCTNS) project in the year 2009. The project has connected 15000+ police stations and 6000 higher offices of police in the country.

In comparison to 2020, there was a 7.6% overall drop in reported crimes in 2021.

The crime rate per lakh population dropped from 487.8 in 2020 to 445.9 in 2021.

Incidents of crime against children increased by 16.2% in 2021 compared to the previous year.

Recent statistics show that **crime against women** increased by 15.3% from the previous year in 2021.

The report states that Assam has the highest rate of crime against women in 2021, other top states include Odisha.

One in four of the **1,64,033 suicide victims** who died in 2021 were daily wage earners.

The number of suicides at the national level increased by 7.17% from 2020 to 2021.

Among the States, Maharashtra reported the most suicide cases (22,207), followed by Tamil Nadu (18,925).

Economic offenses including financial fraud and property fraud saw an increase of 12.35% in 2021.

Deaths caused by accidents came down from 2019 and the number is the lowest since 2010.

9. PM-SHRI Schools

❖ **PM SHRI Schools (PM ScHools for Rising India):**

More than 14500 schools across the country to be developed as PM SHRI Schools to showcase all components of NEP 2020

With upgraded infrastructure, innovative pedagogy and technology, PM SHRI schools to be exemplar schools

The PM SHRI schools will create and nurture holistic and well-rounded individuals equipped with key 21st century skills.

PM SHRI schools to provide mentoring and leadership to other schools in their vicinity

Scheme of PM SHRI schools to be implemented with a total project cost of Rs. 27360 crores for the period of five years from year 2022-23 to 2026-27.

❖ **Key features:**
  ➢ To provide high-quality education in an equitable, inclusive and joyful school environment.
  ➢ To provide leadership to other schools in their respective regions by providing mentorship.
  ➢ The PM SHRI Schools will be developed as Green schools, incorporating environment friendly aspects
  ➢ Focus will be on learning outcomes of every child in every grade.
  ➢ Linkage with Sector Skill Councils and local industry for enhancing employability and providing better employment opportunities will be explored.

❖ **Beneficiaries:**

More than 18 lakh students are expected to be direct beneficiaries of the scheme. Futher impact will be generated through the mentoring and handholding of the schools in vicinity of PM SHRI schools.

10. World's population report: UN population Fund Report

❖ United Nations Population Fund's (UNFPA) flagship State of World Population Report 2022 titled "Seeing the Unseen: The case for action in the neglected crisis of unintended pregnancy" was launched.

❖ **Rising Unintended Pregnancies:**

Between 2015 and 2019, there were roughly 121 million unintended pregnancies globally each year.

In the first 12 months of the Covid-19 pandemic, the estimated disruption in contraceptive supplies and services lasted an average of 3.6 months, leading to as many as 1.4 million unintended pregnancies.

❖ **About Global Population**:

According to the UNPFA the human population across the globe touched 8 billion.

As of 2022, more than half the world's population lives in Asia, China and India being the two most populous countries with more than 1.4 billion people each.

According to UN, it took the global population 12 years to grow from 7 billion to 8 billion, it will take approximately 15 years until 2037, for it to reach 9 billion.

Countries with the highest fertility levels tend to be those with the lowest income per capita.

International migration is now the driver of growth in many countries, with 281 million people living outside their country of birth in 2020.

All South Asian nations including India, Pakistan, Nepal, Bangladesh and Sri Lanka have seen high levels of emigration in recent years.

❖ **About India's Population:**

According to UN, India's fertility rate has hit 2.1 births per woman i.e., replacement-level fertility and is further declining.

While India's population growth is stabilising, it is "still growing at 0.7% per year" and is set to surpass China in 2023 as the world's most populous country.

India is likely to peak at 1.7 billion population in 2048 and then start declining to 1.1 billion at the end of century.

UNFPA estimates, 68% of India's population is between 15-64 years old in 2022, while people aged 65 and above comprise 7% of the population.

Over 27% of the country's population is between the age of 15-29.

At 253 million, India is also home to the world's largest adolescent population (10-19 years).

India has its largest ever adolescent and youth population.

India will continue to have one of the youngest populations in the world till 2030.

11. SHRESHTHA

❖ **Scheme for residential education for students in High school in Targeted Areas:**

Launched by the Ministry of Social Justice and Empowerment.

The scheme 'SHRESHTA' was created with the goal of providing quality education and opportunity to students of SC Category.

Its basic motive is to uplift the socio-economic status of the Scheduled Castes peoples by providing high quality education to their children in best private residential schools in the country.

Admission will be provided in Class 9 and Class 11 of CBSE affiliated private schools.

❖ **Objective:**
  ➢ To make easy delivery of the Governmental initiatives and schemes.
  ➢ To create a conducive atmosphere for the 'Scheduled Castes' socioeconomic advancement and overall growth.
  ➢ Collaborating with volunteer groups to bridge the gap in service-deprived Scheduled Castes (SCs) dominating regions in the education sector.
  ➢ To enable bright Scheduled Caste (SC) students with high-quality education so that they can pursue future opportunities.

❖ **Eligibility**:
  ➢ The students, belonging to Scheduled Castes, studying in class 8th and 10th in the current academic year (2021-22) are eligible for availing the benefits of the scheme.
  ➢ Students from the SC community who come from a marginalized income group with an annual income of up to Rs.2.5 lakhs are eligible.

> The selection will be done through a transparent mechanism which is known as National Entrance Test for SHRESHTA (NETS).

12. PM-MITRA

❖ **PM Mega Integrated Textile Region and Apparel (PM MITRA) Parks:**

The MITRA park aims to integrate the entire textile value chain from spinning, weaving, processing/dyeing, printing to garment manufacturing at one location.

PM MITRA park will be developed by a Special Purpose Vehicle which will be owned by the Central and State Government and in a Public Private Partnership (PPP) Mode.

Each MITRA Park will have an incubation centre, common processing house and a common effluent treatment plant and other textile related facilities such as design centres and testing centres.

❖ **Funding:**

Under the scheme, the centre will provide development capital support for the development of common infrastructure of Rs 500 crore for each greenfield MITRA park and up to Rs 200 crore for each brownfield park.

❖ **Significance:**

> Reduce Logistics Cost - It will reduce logistics cost and strengthen the value chain of the textile sector to make it globally competitive.
> Generate Employment
> Attract FDIs

Recently, the Union Cabinet approved the setting up of seven Mega Integrated Textile Region and Apparel (PM MITRA) Parks at an outlay of Rs. 4,445 crores.

13. Jal Jeevan Mission

❖ Jal Jeevan Mission, is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India.

Launched in 2019, it envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024.

It comes under Jal Shakti Ministry.

The programme will also implement source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water conservation, rain water harvesting.

The Jal Jeevan Mission will be based on a community approach to water and will include extensive Information, Education and communication as a key component of the mission.

❖ **Vision:**

> Every rural household has drinking water supply in adequate quantity of prescribed quality on regular and long-term basis at affordable service delivery charges leading to improvement in living standards of rural communities.

❖ **Objectives:**

> To provide FHTC to every rural household.
> To prioritize provision of FHTCs in qualityaffected areas, villages in drought prone and desert areas etc.
> To provide functional tap connection to Schools, Anganwadi centres, Health centres, wellness centres and community buildings
> To monitor functionality of tap connections.

➢ To promote and ensure voluntary ownership among local community

➢ To assist in ensuring sustainability of water supply system.

➢ To empower and develop human resource in the sector.

➢ To bring awareness on various aspects and significance of safe drinking water.

❖ **Funding Pattern:**

The fund sharing pattern between the Centre and states is 90:10 for Himalayan and North-Eastern States, 50:50 for other states, and 100% for Union Territories.

Recently, the Centre announced that over 50% of rural households have access to tap water supply.

JJM dashboard, around 9.65 crore households (50.38%) have tap water connections across the nation as of 10th June, 2022.

At the State level, Goa, Telangana and Haryana have achieved 100% tap connectivity to all households in the State.

14. Mission Vatsalaya

❖ **Mission Vatsalya child protection scheme:**

Mission Vatsalya, a centrally sponsored scheme, is a plan for achieving the objectives of development and child protection that are in line with the Sustainable Development Goals (SDGs).

Mission emphasises children's rights, advocacy, and awareness while also developing the juvenile justice care and protection system under the guiding principle of "leave no child behind."

The provisions of the Protection of Children from Sexual Offences Act of 2012 and the Juvenile Justice (Care and Protection of Children) Act of 2015 provide the fundamental framework for carrying out the Mission.

❖ **Background:**

Earlier, there were three schemes being implemented under the Ministry of Women & Child Development namely,

➢ Programme for Juvenile Justice for Children in need of care and protection, and Children in conflict with the Law;

➢ Integrated Programme for street children; and

➢ Scheme for assistance to homes for children (Shishu Greh).

In 2009-2010, all three schemes were combined into a single, centrally sponsored scheme known as the Integrated Child Protection Scheme (ICPS).

In 2017, the program's name was changed to the "Child Protection Services" Scheme.

From 2021-22 onwards, the CPS Scheme has been now subsumed under Mission Vatsalya.

❖ **Aim:**

➢ Support and sustain Children in difficult circumstances;

➢ Develop context-based solutions for the holistic development of children from varied backgrounds

➢ Provide scope for encouraging

❖ **Objective:**

➢ The child's best interests should be considered when creating or implementing initiatives and programmes

➢ The right of children to survival, development, protection, and participation is ensured.

➢ To develop fundamental services and improve emergency outreach, community and family-based noninstitutional care.

➢ Coordinate and network with all allied systems to support convergent efforts for seamless service delivery to children
➢ To promote family and community-level child protection.
➢ To promote private sector partnerships to support children within the framework of the law.

❖ **Funding:**

The fund-sharing pattern between Centre and State & Union Territories is in the ratio of 60:40 respectively.

❖ **Key Features of New Guideline**

Mission Vatsalya scheme is implemented by the Ministry of Women and Child Development.

Under the scheme, a monthly grant of Rs. 4000/- per child is provided for family-based non-institutional care.

Mission Vatsalya provides support to a 24×7 helpline service for children in partnership with States and Districts, as defined under the JJ Act, 2015.

Under the Mission, Cradle Baby Reception Centres in at least one Specialized Adoption Agency (SAA) are envisaged to be set up in each district to save abandoned children.

According to the guidelines, Mission Vatsalya would assist State Adoption Resource Agencies (SARA), which in turn will aid the Central Adoption Resource Authority (CARA) in promoting adoption.

The establishment of open shelters by the state government will be encouraged in order to provide care for children who are homeless, missing, being trafficked, working, living on the streets, beggars, substance abusers, etc.

15. Mission Shakthi

❖ 'Mission Shakti' aimed at Strengthening Interventions for Women Safety, Security and Empowerment.

It is an integrated women empowerment programme as an umbrella scheme for the safety, security, and empowerment of women for implementation during the 15th Finance Commission period 2021-22 to 2025-26.

The norms of 'Mission Shakti' will be applicable with effect from 1st April 2022.

❖ **Aim:**
➢ The scheme seeks to make women economically empowered, exercising free choice over their minds and bodies in an atmosphere free from violence and threat.
➢ It also seeks to reduce the care burden on women and increase female labor force participation by promoting skill development, capacity building, financial literacy, access to micro-credit, etc.

❖ **Objective:**

The objective of Mission Shakti is to provide to all women and girls including differently-abled, socially and economically marginalized, and vulnerable groups, in need of care and protection, with short-term and long-term services and information for their holistic development and empowerment.

❖ **Sub-schemes:**
➢ 'Mission Shakti' has two sub-schemes – **'Sambal' and 'Samarthya'.**

While the Sambal sub-scheme is for the safety and security of women, the Samarthya sub-scheme is for the empowerment of women.

➢ **Sambal**

Improve accessibility and integrate all efforts and various government initiatives towards the safety and protection of women.

It is also for securing women's rights and entitlements to a comprehensive continuous care

Support women affected by violence and in distress and assist them in re-emerging as integrated partners in nation-building.

> The components of the 'Sambal' sub-scheme:

One Stop Centre (OSC)

Women Helpline (WHL)

Beti Bachao Beti Padhao (BBBP)

It has a new component of Nari Adalats – women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families.

> **Samarthya**

Improve accessibility to various government services available for women at various levels through reinforcement.

Convergence for development and empowerment of women.

The scheme aims toward social, cultural, political, and economic development and empowerment of women.

> The components of the 'Samarthya' sub-scheme:

Ujjwala and Swadhar Greh

Working Women Hostel has been included with modifications

National Creche Scheme for children of working mothers

Pradhan Mantri Matru Vandana Yojana (PMMVY) under the ICDS

16. SMILE-75

❖ **SMILE - Support for Marginalised Individuals for Livelihood and Enterprise:**

To address the persisting problem of destitution and beggary

Under the "SMILE-75 Initiative", 75 identified Municipal Corporations, in the spirit of AzadikaAmritMahotsav, will undertake comprehensive rehabilitation of persons engaged in the act of begging.

The Ministry of Social Justice & Empowerment has allocated a total budget of Rs.100 crore for the SMILE scheme for coming years till 2025-26.

❖ **Aim:**
> Municipal Corporations, in collaboration with NGOs and other stakeholders will cover several comprehensive welfare measures for persons who are engaged in the act of begging, with focus extensively on rehabilitation, provision of medical facilities, counselling, awareness, education, skill development, economic linkages and convergence with other Government welfare programmes etc.

❖ **Objectives:**
> To make cities/town and municipal areas begging-free.
> To make a strategy for comprehensive rehabilitation of the persons engaged in the act of begging through the coordinated action of various stakeholders.

According to the Census 2011, the total number of beggars in India is 4,13,670 (including 2,21,673 males and 1,91,997 females) and the number has increased from the last census.

West Bengal tops the chart followed by Uttar Pradesh and Bihar.

17. Personal Data Protection Bill

❖ Union Government has released a revised personal data protection bill, now called the **Digital Personal Data Protection Bill, 2022.**

❖ Seven Principles of the 2022 Bill:

➢ Firstly, usage of personal data by organisations must be done in a manner that is lawful, fair to the individuals concerned and transparent to individuals.

➢ Secondly, personal data must only be used for the purposes for which it was collected.

➢ The third principle talks of data minimisation.

➢ The fourth principle puts an emphasis on data accuracy when it comes to collection.

➢ The fifth principle talks of how personal data that is collected cannot be "stored perpetually by default" and storage should be limited to a fixed duration.

➢ The sixth principle says that there should be reasonable safeguards to ensure there is "no unauthorized collection or processing of personal data".

➢ Seventh principle states that "the person who decides the purpose and means of the processing of personal data should be accountable for such processing".

❖ **Key features:**

➢ **Data Principal and Data Fiduciary:**

Data Principal refers to the individual whose data is being collected.

Data Fiduciary is the entity (individual, company, firm, state etc), which decides the "purpose and means of the processing of an individual's personal data".

Personal Data is "any data by which an individual can be identified".

Processing means "the entire cycle of operations that can be carried out in respect of personal data".

➢ **Rights of Individuals**

Access to Information

Right to Consent

Right to Erase

Right to Nominate

➢ **Data Protection Board:**

The Bill also proposes to set up a Data Protection Board to ensure compliance with the Bill.

➢ **Cross-border Data Transfer:**

The bill allows for cross-border storage and transfer of data to "certain notified countries and territories" provided they have a suitable data security landscape, and the Government can access data of Indians from there.

➢ **Financial Penalties:**

For Data Fiduciary - Imposed ranging from Rs. 50 crores to Rs. 500 crores.

For Data Principal - user could be fined up to Rs 10,000.

➢ **Exemptions:**

The government can exempt certain businesses from adhering to provisions of the bill National security-related exemptions

18. SIRPI Scheme

❖ **Students in Responsible Police Initiatives (SIRPI) scheme:**

This scheme for improving the relationship between police and public and to make students as responsible citizens.

"SIRPI scheme is to develop responsible students. When police and public work together, there is no doubt that the crimes can be completely stopped.

Under the scheme, 50 students each from 100 government schools will be selected on a voluntary basis and will be given special training on moral education, sports and yoga.

SIRPI would be implemented with an outlay of ▢ 4.25 crore.

To be offered classes in physical fitness, sports, parade by police officers and experts.

The students will be taken to eight tourist places in the State and will be given special training on history and general knowledge.

Students will also be given special training on working of the police department, their organization, their work, emergency control rooms and explored to the work done by Greater Chennai Police. "With the help of these classes best "SIRPIs" (sculptors) in English will be developed to develop a responsible society

Under the scheme, two teachers from every school will be selected as nodal officers.

Initially, the scheme is implemented in 100 government schools and in the subsequent phases the scheme will be expanded across the state.

2,764 boys and 2,236 girls studying eighth standard have volunteered to join the scheme.

19. Ennum Ezhuthum Scheme

❖ Through the "counting and writing program", it has been decided to train 1st, 3rd class students in English, Mathematics and Tamil in three stages namely **"aestivation, budding and flowering"**

The plan is to transform 8 - year - olds into literate children by 2025. More than 18 lakh students are expected to benefit from the scheme.

Tamil Nadu Chief Minister has launched the ' Counting and Writing ' program to enhance the learning and reading skills of students in grades one to three.

Primary school students ' ability to read and write decreased during the Corona period.

To overcome this, a counting and writing program has been introduced for students in government and government - aided schools from grades one through three.

Accordingly, children up to the third standard are to be given training in reading, writing and reading sentences fluently.

❖ This training is given in three stages namely "aestivation, budding and flowering".

20. Pudhumai Penn Scheme

❖ The Government of Tamil Nadu has **launched Moovalur Ramamirtham Ammaiyar Higher Education Assurance Scheme** to enhance the enrolment ratio of girls from Government schools to Higher Education Institutions.

Through this scheme, financial assistance of Rs. 1000/month will be provided to the girls till their completion of the UG degree/Diploma/ITI/any other recognized course.

The scheme is alternately known as Puthumai Penn Scheme or Pudhumai Penn Scheme or Pen Kalvi Scheme.

As the name suggests, Pudhumai Penn, which means modern woman, so the name of the scheme has been kept to remind people that the scheme is not just financial aid but also focuses on modern times.

This Pudhumai Penn is a "revolutionary plan" that "is going to be pathbreaking and revolutionary in the next few years because of the wisdom to concentrate on modern times."

This initiative also prioritizes the education of female residents.

The Moovalur Ramamirtham Ammayar memorial 'Puthumai Penn' (Modern Woman) Scheme, which stipulated that female students who attended government schools from grades 6 to 12 and were interested in pursuing higher education were eligible to receive a monthly stipend of 1,000 rupees.

❖ **Objectives:**
  ➢ The initiative includes focusing on girl students who need financial help in learning.
  ➢ This indicates that this program is also aimed at educating female residents.

❖ **Benefits:**
  ➢ Providing financial assistance, encouraging female students to continue their education, and discouraging parents and guardians from allowing their daughters to be married at a young age.
  ➢ New era of innovation within the next several years.
  ➢ This program offers a boost to the confidence of young women.
  ➢ Aims to help 6 lakh females per year and has been budgeted at Rs 698 crores.
  ➢ The plan discourages child marriages and empowers women. They shouldn't accept anything that hurts their pride.

21. CM Morning Breakfast scheme

❖ The Tamil Nadu government has introduced the Chief Ministers' Breakfast Scheme for the first time in the state on July 27, 2022.

It would assist around 1500 government elementary schools, which will have approximately 1.14 lakh children.

Under the program, breakfast will be provided to pupils in classes one through five.

The government approved 33.56 billion rupees for the Chief Minister's Breakfast Scheme on July 27, 2020.

This will only give the most nutrient-dense breakfast to elementary school children on school days.

This scheme will be implemented through local bodies till it gets expanded and covers all of Tamil Nadu.

A prepared meal consisting of 150–500 grams of breakfast with sambar and veggies is to be supplied to each and every kid. The government has also provided the breakfast menu for the five working days (Monday through Friday).

❖ **Objectives:**
  ➢ The purpose of the session is to raise awareness of the significance of self-confidence among schoolchildren.
  ➢ Educating schoolchildren on the importance of mental and physical health by bringing in such messages will not only make students aware but will also raise awareness throughout society.
  ➢ The goal of the program is to ensure that schoolchildren have a nutritious breakfast, which will not only help them get off to a good start in the day but will also have an effect on their overall health.

❖ **Benefits:**

➢ The breakfast program will assist students in grades 1 through 5 by offering a free meal in the early morning.

➢ Breakfast nourishes the child's brain and general wellness.

➢ The scheme encourages children and also nourishes them.

➢ With the aid of the meal, children who miss breakfast in the morning will not feel hungry at school and will remain attentive throughout the day.

➢ Help eliminate the nutritional shortfall in elementary schools

22. Thaghaisal Schools

❖ **School of Excellence:**

In the initial phase, as many as 26 schools of excellence and 15 model schools will be covered with state-of-the-art infrastructure and learning models named **'Thagaisal Palligal' and 'Mathiri Palligal'**, respectively, in Tamil, said a statement from the state government.

Tamil Nadu Chief Minister inaugurated the School of Excellence and Model School scheme in the state.

This scheme is based on the Delhi Model School Scheme.

Under this scheme, 26 schools of excellence and 15 model schools of the state have been included in the first phase.

These schools will be named Thagaisal Palligal and Mathiri Palligal Model School in Tamil language.

Thagaisal schools do not have boarding facilities. There will be projectors, smart boards, skill classrooms and a swimming pool.

❖ **Significance:**

➢ These schools help students develop their skills and increase their interest in sports.

➢ Infrastructural facilities of Thagaisal schools will be improved.

➢ Classrooms with modern facilities will be established in each school as per student-teacher ratio.

➢ Skilled classrooms called smart classrooms and hi-tech laboratories with internet facility will be established in these schools.

➢ Summer camps will be conducted for the students from class 6 onwards with the participation of mentors and multidisciplinary experts. Training classes will also be conducted for teachers.

➢ Thagaisal school students will be given the opportunity to visit important institutions of the country.

➢ A well-equipped library and dedicated librarians will improve the reading habits of the students.

➢ Sports are coached by professional coaches.

➢ Competitions are held in arts, drama and music

23. NAMASTE

❖ **NAMASTE - National Action for Mechanised Sanitation Ecosystem:**

It is a Central Sector Scheme and joint initiative of the MoSJE and the Ministry of Housing and Urban Affairs (MoHUA).

NAMASTE envisages the safety and dignity of sanitation workers in urban India by creating an enabling ecosystem that recognizes sanitation workers as one of the key contributors to the operations and maintenance of sanitation infrastructure.

The Scheme has been approved for four years from 2022-23 to 2025-26.

❖ **Significance:**
  ➢ Help in providing sanitation workers a sustainable livelihood and enhancing their occupational safety through capacity building and improved access to safety gear and machines.
  ➢ Aim to provide access to alternative livelihoods support and entitlements to reduce the vulnerabilities of sanitation workers.
  ➢ Enable them to access self-employment and skilled wage employment opportunities
  ➢ To bring about a behavior change amongst citizens towards sanitation workers.

❖ **Objectives:**
  ➢ Zero fatalities in sanitation work in India
  ➢ Skilled workers perform all sanitation work
  ➢ No sanitation workers come in direct contact with human fecal matter
  ➢ Sanitation workers are collectivized into SHGs
  ➢ Strengthened supervisory and monitoring systems at national, state, and ULB levels
  ➢ Increased awareness amongst sanitation services seekers

❖ **Implementation:**
  ➢ Five hundred cities (converging with AMRUT cities) will be taken up under this phase of NAMASTE.

❖ **Benefits:**
  ➢ Enumeration
  ➢ Extending Insurance Scheme Benefits
  ➢ Livelihood Assistance
  ➢ Saturation with Social Security Schemes' benefits

SCIENCE & TECHNOLOGY

List of PSLV Launches

1. Feb 14, 2022 - PSLV C - 52 / EDS - 04 Mission
2. June 30, 2022 - PSLC C - 53 / DS EO Mission
3. Nov 26, 2022 - PSLV C - 54 / EOS 6 Mission

1. PSLV C - 52/EOS - 04 Mission

1. Launch - Feb 14, 2022
2. Launches Type - PSLV XL
3. Weight - 1710 kgs
4. Mission Life - 10 yrs
5. EOS - 04
   – It is a radar imaging satellite to provide high quality images under all weather conditions
   – Applications
      a. Agriculture

   b. Forestry & plantations
   c. Soil moisture and hydrology
   d. Flood mapping
6. Also carried 2 small Satellites
   - INSPIRE sat - 1
   - INS - 2TD
7. A) INSPIRE sat - 1
   - Developed by Indian Institute of space Science and Technology (IISST) + University of colaroda, Taiwan, Singapore
   - Weight 8.1 kg
   - It is a student developed satellite
   - Uses: To understand the ionosphere dynamics and sun's coronal heating process.
8. INS - 2TD
   - This is a technology Demonstrator satellite from ISRO. A precursor to the India - Bhutan joint satellite
   - Uses: It has a thermal Imaging Camera
         To assess land surface temperature of water surface temperature of wetland
   Delineation of vegetation (crops and forest)

PSLV
- It is a 3rd generation launch vehicle of India
- It is the first Indian launch vehicle to equipped with liquid state
- First launch - 1994
- Workhorse launch vehicle of ISRO
- Four stages of PSLV
  o 1st and 3rd stages solid
  o 2nd and 4th stages liquid

2. PSLV C - 53 / DS - EO Mission

1. Launch - June 30, 2022
2. Weight - 522.8 kgs (3 satellites)
3. Orbit - Low Earth orbit LEO
4. It is the second dedicated commercial mission of (NSIL) New space India Limited
5. Satellites carried by PSLV C - 53
   a. DS - EO
   b. NeuSAR
   c. SCOOB - I
6. a) DS - EO : It will carry an Electro-optic, multi spectoral pagload that will provide colourful images of land classification, humanitarian assistance, disaster relief
   b) Neusar
      - It is Singapore's 1st small commercial satellite
      - It is capable of providing images in day and night and under all weather conditions
   c) SCOOB - I
      - It is the first in a sever of student satellites designed to provide practical training for the university's satellite research centre.

3. PSLV C - 54 / EOS - 6 Mission (Oceansat 3)

1. Launch - Novemebr 26, 2022
2. Launcher - PSLV - XL
3. Orbits - Multiple Orbits
4. Total satellites - 9 : Earth observation satellite (EOS 6)

   +

   8 Nano Satellites includes (Astrocast, Thybolt, Anand and INS-28)
5. About EOS - 6

   It is a 3rd generation satellite in the Oceansat Series, whoch provides continued services of Oceansat - 2 - 2009
6. Payloads Carried by EOS - 6
   a. Ocean colour Monitor (OCM - 3)
   b. Sea Surface Temperature Monitor (SSTM)
   c. Ku - Band Scatterometer (SCAT - 3)
   d. ARGOS

7. Applications
   a. To observe ocean colour
   b. Sea surface temperature
   c. Wind vector data to use oceanography climatic and meteorological applications
   d. It also supports value added products such as potential fishing zone using chlorophyll, SST and wind speed

Gaganyan Project

1. Also known as Indian Human Space Program
2. Project Cost - Less than 10000 Crore
3. Launch Vehicle - GSLV MK - III
4. Orbit - Low Earth Orbit (LEO)
5. Astronauts - 3
6. Days in space - 5 to 7 days
7. Training will be given by Russia
8. Collaboration :
   - ISRO + DRDO + other space and defences agencies of India
   - France - space medicine
   - Russia - Training
   - ESA - Ground station support
9. Major Components
   - Human Rated Launch vehicle
   - Crew Escape system
   - Orbital Module with human presence
10. Objectives of the mission
    - Enhancement of science and technology levels in the country
    - A National project involving several institutes, academic and industry
    - Improvement of Industrial growth
    - Inspiring youth

– Development of technology for social benefits
– Improve international co-operation

India - Aditya L1 Mission

- Launch - expected 2022
- Vehicle - PSLV XL (7 payloads)
- Mars - 400 kg
- Plance - Legrange point 1
- Record - ISRO's Second Space based astronomy mission after Astrosat 2015
- India's first solar mission

Objectives

- To study Sun's Corona, Chromosphere and Photosphere
- It will help in tracking earth directed storms and to predict its impact through solar observations.

List of Payloads

1. VELC - Visible emission Line Coronograph
2. SUIT - Solar Ultraviolet Imaging Telescope
3. ASPEX - Aditya Solar Wind Particle Experiment
4. Plasma Analyses Package for Aditya
5. SOLEXs - Solar Low Energy X-ray Spectrometes
6. HELIOS - High Energy L1 Orbiting X-ray Spectrometes
7. Magnetometers

Why did ISRO renamed? Aditya 1 to Aditya L1

1. Earlier the mission was aimed to launch 800km LEO
2. Hower realizing that Halo orbit around L1 will be more advantages to capture Sun's corona

1. Lagrange Point

a. Named after Italian French Mathematics Josephy Louis Lagrange
b. Lagrange are positions in space where the gravitional forces of a two body system produce enhanced regions of attraction and repulsion
c. L1 point about 1.5 mn/km from Earth or about $1/100^{th}$ of the way to the sun
d. These can be used by spacecraft to reduce fuel consumption needed to remain in position
e. Advantage - Satellite - viewing the sun without eclipse

2. JWST (James Webb Space Telescope)

- Launch date : Dec 25, 2021
- Cost : $10 billion
- Launched by : Arian - 5
- Orbit : Second Langrange point (Nearly mm miles from
- Mass : 6500 kg
- Launched in : French huinea
- Primary Mirror : 21.3ft (6.5 m across)
- Sunshield : 22m × 12m

Collaboration between :

1. National Aeronautics and space Administration (NASA)
2. The European Space Agency (ESA)

3. The Canadian Space Agency (CSA)

About (JWST)

NASA's largest and most powerful space Science telescope

Time Taken

It took 30 days for the JWST to travel nearly a million miles to its permanent home - Lagrange points

Focus - 4 main areas

1. First light in the universe
2. Assembly of galaxies in the early universe
3. Birth of star's and protoplanetacy systems
4. Birth of planets including the origin of life

Lifespan

1. Minimum - 5 years
2. Goal - To increase to 10 years

Photos

1. It is expected to take amazing photos of celestial bodies like its predecessor Hubble space I
2. Also take the photos of Explanets.

Scientific Instruments

1. Near Infrared Camera
2. Near Infrared Spectograph
3. Mid Infrared Instrument
4. Fine guidance Sensors

JWST is considered as the successor of Hubble space Telescope.

Hubble HST		**JWST**
1. 507 km	Distance from Earth	1. 1.5 mn km at second sun - Earth lagrange point
2. 2.4 m	Primary mirror Diameter	2. 6.5 m
3. Young Galaxies (12.5 bn years ago)	Searching for	3. New born galaxies (13.5 bn years)
4. yes	Serviceable	4. No
5. Visible, UV Part of near infrared	Wavelenghts	5. Near and mid infrared
6. Hubble orbits	Orbit	6. JWST Orbits the sun

Previous space Mission

1. 1990 - Hubble
2. 2003 - Spitzer
3. 2009 - Hercher
4. 2021 - JWST

Upcoming

5. 2023 - SPHEREx's

Search for fundamentals of life - such as water and organic matter within Milkyway

6. 2027 - WFIRST

(Wide Field Infrared Survey Telescope
a. To study dark energy
b. Explore exoplanets
c. Galactic Surveys

DART Mission

1. DART - Double Asteroid Redirection Test
2. Launch - November 2021
3. International Partners
   - European Space Agency ESA
   - Italian Space Agency ISA
   - Japan Aerospace Exploration Agency JAXA
4. Aim : The main aim of the DART mission is to test the newly developed technology that would allow a spacecraft to crash into an asteroid and change its course
5. Target : The spacecraft is heading for a double asteroid system, where a tinymoon asteroid named Dimorphos, orbits a larger asteroid Didymos.
6. Objectives
   - To demonstrate a kinetic impact with Dimorphos
   - DART will change the binary orbital period of Dimorphos
   - It is a Suicide mission and the spacecraft will be completely destroyed
7. Importance
   - To identify furture asteroid collisions and prevent them earlier
   - To save human's life, if the asteroid enters earth atmosphere and causing damages to the environment
   - Useful in conducting research about solar system

Artemis I Mission

1. Launch - November 16, 2022
2. Artemis 1 - Uncrewed test flight to the moon
3. Artemis 2 - A crewed flight to the moon
4. Artemis 3 - To land first female astronaut and first astronaut of colour on the moon
5. What is Artemis program
   - To land the first woman and first person of colour on the moon
   - Explore the lunar surface
   - Lay the groundwork for sending astronauts to Mars.
6. Artemis I
   - It is called Artemis program. Because Artemis is the mythological greek goddess of the moon and twin sister of Apollo
7. Objectives and Importance
   - A chief aim of NASA is to land the first woman and first person of colour on the lunar surface
   - To pave way for the future deep space missions
   - To gather more knowledge about
   - The discovery of water on the moon and potential deposits of rare minerals hold promise for both scientific exploration and exploitation

- The Artemis programme is one of the NASA's first large state collaborations with commercial companies, such as space X and Boeing

Liquid Mirror Telescope (LMT)

1. India has setup world's first liquid mirror telescope for astronomy in Uttarakhand
2. International LMT - Dayasthal Observatory campus owned by Aryabhatta Research of Institute of observational Sciences (ARIES), National Uttarakhand.
3. Height - 2450 metres above Mean see level
4.

Conventional Telescope	Liquid Mirror Telescope
The conventional telescopes have polished glass mirrors with a single or combination of curved surface	ILMT is made up of reflective liquids
It is used to observe special celestial objects on specific nights	It will capture all possible celestial objects from stars, galaxies, supernovae asteroids to specific debris
	ILMT will capture the sky's images on all nights between two successive twilights for the next 5 years, Starting October 2028

Note : For Protecting it from moisture during monsoon, the ILMT will remain shut for operations between June and August

5. International Cooperation with
   - India + Belgium
   - Canada
   - Poland
   - Uzbekistan
6. Funding : 80 to 40 crores (Belgium + Canada)
7. Significance of ILMT
   - Data : Enormous amount of data (10 - 15 GB) per night will be generated. It will be useful in research and other development purposes for global scientific communities
   - Tools : Artificial intelligence, Machine learning Big data analytics will be deployed for screening, processing and analyzing the data
   - Spectrographs : select data can be used as a base data for carrying out research using spectrographs

Private sector participation in space

Initiatives taken by the GOI for the entry of private sector participation
1. INSPACE
2. NSIL
3. Antrix
4. Digantara
5. Dhruva
6. Mission Parambh

1. INSPACE
- Setup - June 2020
- National Space Promotion and Authorisation centre (INSPACE)
- Autonomous agency under Dept of spqace
- Objective
  - To promote and develop Indian space ecosystem accelerating space economy
  - To enable and nurture NAE's Non - Government Entities to accomplish their ventures in space sector
  - To authorize space operation and services in the country throughout well-defined framework
  - To supervise the activities of NAE's in the country

2. NSIL
- New space India limited
- Head Quarters - Bengaluru
- Setup March 2019
- Under administrative control of Department of space
- It is the commercial aim of ISRO
- Deals with local industrial players
- Objectives
  - To enable India industries to take up high technology space related activities
  - It is also responsible for the promotion and commercial exploitation of the products and services emanating from the India space program
  - Produce PSLV, SSLV and other launch Vehicles in partnership with private

3. Antrix
- Under Administrative Control of Government (Dept of space)
- Set up 28 September 1992
- 2008 - MINIRATNA status
- It is also the commercial aim of ISRO
- The difference between NISL and local players in space deals where Antrix deals with foreign companies

4. Digantara (Private)
- Head Quarters - Bangalore
- Startup company for space
- It is India's first private company in space
- It developed India's first in - orbit space debris monitoring and tracking system or space situational awareness (SSA) Observatory in Garhwal region of Uttarakhand
- Space Situational Awareness
  i. Space Surveillance and Tracking of man-made objects (SST)
  ii. Space weather monitoring and forecast (SWE)
  iii. Near Earth objects monitoring

5. Dhruva (private)
- Head Quarters - Hyderabad
- It is a National award winning space technology startup focused on building full stack space engineering solutions

6. Mission Parambh

- Inidia's first private sector rocket Mission Parambh - "Vikram S"
- Developed by Skyroot Aerospace - Hyderabad
- It is called "Vikram - S". It is named after Vikram Sarabhai
- Launched from Sriharikotta

"Vikram - S"
- It is a single stage solid fuel subordinate launch vehicle
- It is a small satellite launch vehicle (SSLV) that will carry payloads weighing between 290 and 560 kg into Sun - Synchronous polar orbits
- The launch vehicle's Engine was named as kalam-80
- It will carry 3 payloads. 2 will be of Indian customers and one will be of foreign customers
- Supported by : ISRO, IN-Space

National strategy on Blockchain 2021

1. **Blockchain**
   o Blockchain a distributed ledger technology enables a layer of trust and eliminates the need for a third party to validate the transactions.

2. **Objectives**
   o Create a trusted digital platform by evolving a national blockchain infrastructure
   o Foster research and development in blockchain technology to address challenges related to rapid application development and deployment, interoperability, security and privacy
   o Encourage development of standars in the areas of blockchain Technology
   o Promote capacity building, skill development and innovation in blockchain technology
   o Evolve a centralized planning and decentralized execution model for large scale adoption
   o Strengthen India's collaboration with global organisations on blockchain technology

3. **Advantages**
   o It is a decentralized, vigilant, time status and consensus based data storage for the stakeholders
   o Depending on the need of the application domain, either permissioned
   o Various applications
     ▪ Education
     ▪ Governance
     ▪ Finance & banking\
     ▪ Healthcare
     ▪ Logistics
     ▪ Cyber security
     ▪ Media
     ▪ Power sector

4. Disadvantages
   o Scalability
   o Security
   o Interoperability
   o Data localization
   o Disposal of record

5. Challenges

- o Technology adoption
- o Regulatory compliance
- o Identification of suitable use cases
- o Data format
- o Awareness and skill set

Accelerate Vigyan

1. Launch - July 2020
2. Launched by - Science and Engineering Research Board (SERB)
3. Aim : To provide single platform for research internships, capacity building programs, and workshops across the country
4. Two components :
   - Accelerate Vigyan
     i. ABHYAAS programme (Boosting R & D by enabling PG/Ph.D students through High end workshops)
        1. KARYASHALA (workshops)
        2. VRITIKA (internships)
     ii. SAMOOHAN Programme (Capacity building activities in S & T)

Vigyan Sarvatra Pujyate

1. Meaning - Science is worshipped everywhere
2. It is a week long country wide festival
3. Organised by - Ministry of culture
4. Part of "Azadi ka Amrit Mahotsat" Programme
5. Objectives
   - To celebrate S & T achievements over the 75 years through programmes that inspire our youth and help them navigate into building a progressive nation
   - To reinforce the commitment of scientific community towards the economic and social development of the country
   - to showcase the science and technology improvements for the future (2047)
6. Exhibitions are being held in 75 location and are based on 4 themes
   - Anals of science, tracing individual contributions
   - Milestones of modern S & T
   - Swadeshi Paramparik inventions & innovation
   - Transforming India

PARAMPORUL Supercomputer

1. Inauguration - May 25, 2022
2. PARAMPORUL : A state of the art supercomputer at "NIT - Tiruchirapalli" dedicated to the nation under National Super community Mission"
3. Joint Initiative
   - MEITY (Ministry of Electronics and Information Technology)
   - DST (Department of Science and Technology)
4. MoU
   - NIT + C-DAC (Centre for Development in Advanced computing)

5. Technology used : Direct contact liquid cooling technology to obtain high power usage effectiveness and thereby reducing operational cost
6. Applications
   - Weather and climate
   - Bioinformatics
   - Computational Chemistry
   - Molecular Dynamics
   - Material Sciences
   - Computational fluid dynamics
7. It will benefit for researches conducting in health, agriculture, weather and financial services

What is National Supercomputing Mission (NSM)?
1. Launch - 2015
2. Project cost - Rs.4,500 crore
3. Joint effort - Meity + DST
4. Implemented by - C-DAC + IISC Bangalore
5. Duration - 7 years
6. Aim : To empower National academic and R & D institutions spread over the country by installing a vast computing grid comprising of more than 70 high - performance computing facilities
7. Objectives
   - Integration with NKN (National Knowledge Network)
   - To make India one of the world leaders in supercomputing technology
   - To attain global competitiveness and ensure self reliance in the strategic area of supercomputing technology
   - To carryout research in supercomputers and attract investments for the tech development
8. Applications
   - Climate modeling
   - Weather production
   - Aerospace engineering include CFD, CSM, CEM
   - Computational biology
   - Molecular dynamics
   - Atomic energy stimulations
   - National security / Defence applications
   - Seismic Analysis
   - Disaster Management
   - Big Data Analytics
   - Astrophysics
   - Finance
   - Cyber Physical System
   - Computational Chemistry, Computational Material science and nanomaterials
9. 3 phases of NSM
   - Phase I - Computing speed of 6.6 peta FLOPS
   - Phase II - 8 more institutions with 10 PF capacity
   - Phase III - 3 systems of 3 PF each and one system of 20 PF as national facility
10. Till date (May 2022)

- 15 Super computers have been installed across the nation with compute capacity of 24 petaflops.
11. India's first supercomputer - PARAM 8000

C - DAC

- Centre for Development of Advanced computing
- Set up March 1988
- It is the premier R & D organisation of (Meity) for carrying out R & D in IT, electronics and associated areas.

TIHAN

1. Technology Innovation Hub on Autonomous Navigation
2. Established at IIT Hyderabad July 04, 2022
3. Developed by Ministry of science and Technology
4. Budget - Rs.130 crore
5. It is a unique, first of its kind, state of the art futuristic "Autonomous Navigation" facility to develop unmanned ground and aerial Vehicles
6. Aim : To make India a global player in the futuristic and next generation "smart mobility" technology
7. Objectives
   - To promote collaborative research between academic, industry and R & D labs for next generation mobility solutions both at global and National level
   - Test bed for autonomous navigation to engage with startups which producer UAV, drones etc.

Roshini

1. India's first saline water LED lamp
2. Launched by MoES Ministry of Earth Science
3. Aim : To achieve energy security, energy access and reducing the carbon footprints of the National economy
4. Roshini LED lamps uses saline water as an electrolyte between specially designed electrodes to power the LED lamps.
5. Benefits :
   a. Saline water lantern will bring Ease of Living" to the poor and needy particularly the fishing community living along the 7500 km long coastline of India.
   b. It will also boost and supplement PM UJALA Scheme launched in 2015 for the distribution of LED bulbs across the country.

"SPARK" Program

1. Studentship Program for Ayurveda Research Ken
2. Launched by central council for Research in Ayurvedic Sciences (CCRAS)
3. Aim : To support the young minds of students and to promote the culture of evidence based scientific research in the field of Ayurveda
4. Objectives:

- To support innovative research in Ayurveda
- Guidance of top industry experts and support of Rs.50,000
- To create an opportunity for the strong community of one lakh Ayurveda students in the country.

NAVIC

- Recently the Indian Government is pushing smartphone makers to enable support for its NAVIC navigation system in new devices sold in the country from next year.

What is NAVIC?

- Navigation with Indian constellation
- It is an iindependent stand alone navigation satellite system developed by the ISRO (IRNSS)
- Operational 2018
- It consists of 7 satellites and covers the whole of India's landmass and upto 1500 km (930 miles) from its boundaries
- NAVIC was erstwhile known as Indian Regional Navigation satellite system
- The Ground network consists of control centre, precise liming facility range and integrity monitoring stations, two way ranging stations

Services offered by NAVIC

- Standard position service SPS for civilian users
- Restricted service (RS) for strategic users

NAVIC equivalent with

- GPS Global Positioning system - US
- Glonass - Russia
- Galileo - European Union
- BeiDou - China

Few Applications of NAVIC

- Transportation (Terrestrial, aerial and marine)
- Location based services
- Personal mobility
- Resource Monitoring
- Surveying and geodesy
- Scientific research
- Time dissemination and Synchronisation
- Safety of life alert dissemination

Liquid Nano Urea:

Country's first liquid Nano urea plant was setup at Kalol, Gujarat

What is Liquid Nano Urea?

Nano urea liquid is a nanotechnology based fertilizer to increase the growth of crops by restoring nitrogen to plants an alternative to conventional urea.
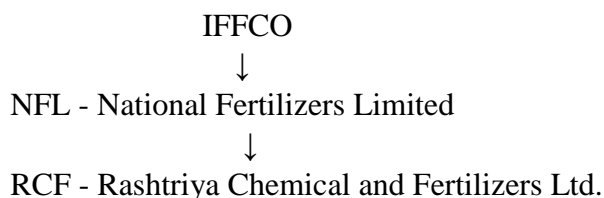
Difference between Conventional urea, Nano urea liquid

Conventional urea, a chemical fertilizer is used to artificially fulfill the nitrogen need of the plant while Nano urea liquid is developed to replace the former and cut down its requirement by 50%

Liquid Nano urea plant setup by

- IFFCO - The Indian Farmers Fertilizer co-operative limited
- It is capable of producing 1.5 lakh bottles of 500ml + capacity of Nano Urea per day
- Eight more such plants are announced to setup across India

Technology transfer

<div align="center">

IFFCO

↓

NFL - National Fertilizers Limited

↓

RCF - Rashtriya Chemical and Fertilizers Ltd.

</div>

To establish new Urea production plants and ramp up the supply of Nano Ureas to farmers of the country.

Benefits

1. Lower usage
2. Low Cost
3. Increased productivity
4. Reduce transportation costs
5. It will make storage easier
6. Less pollution

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National Hydrogen Mission

</div>

- Announced by PM in August 15, 2021

Aim

- To lay down the vision, intent and directions for Harnessing hydrogen energy by GoI
- To develop India as a global hub for Manufacturing of hydrogen
- The mission would put forward specific strategy for the short term (4years) and long term (10 years)
- To create demand in identified segments, area for use of green hydrogen in steel, fertilizer, petrochemical industries.
- To meet the Government climate targets i.e carbonless to achieve netzero by 2070
- Tp produce 5 million tonner of green hydrogen by 2030

First step : Green hydrogen and Green Ammonia Policy

- Hydrogen and ammonia the future to replace fossil fuels using renewable energy

Objectives of GH & GA Policy

- Clean fuel to common people
- Reduce dependence on fossil fuel
- Reduce crude oil imports
- Emerge as export hub for green hydrogen
- Produce 5 million tonnes of green hydrogen by 2030

Why Hydrogen energy?

- It has zero carbon content and is non polluting source of energy
- It is expected to reduce carbon emissions that are set to jump by 1.5 bn tonnes 2021
- It has the highest energy content by weight and lowest energy content by volume

Categories

- Depending on the nature of extraction, hydrogen is cateogorised into 3 categories

1. Grey hydrogen
   - Extracted from hydrocarbons (fossil fuels, natural, gas)
2. Blue hydrogen
   - Extracted from fossil fuels
   - Here the byproducts are captured and stored
3. Green hydrogen
   - Generated from renewable energy like (solar, wind etc)

Uses of Hydrogen

1. Industry
   - Oil refining
   - Ammonia Production
   - Methanol production
2. Transport
   - Cars - Depends on fuel cell costs and refueling station
   - Trucks - To reduce the delivered price of hydrogen
3. Buildings : Hydrogen could be blended into existing natural gas networks with the highest potential in multifamily and commercial buildings
4. Power generation
   - Hydrogen is one of the leading options for storing renewable energy
   - Hydrogen and ammonia can be used in gas turbines to increase power flexibility

India's progress towards Green Hydrogen

1. 2020 - India's hydrogen demand cost stood at 6 MT/year
2. 2030 - Hydrogen cost will be down by 50%
3. 2047 - To transform India into energy independent Nation
4. India has declared its ambition to become an exporter of hydrogen to Japan, South Korea and Europe

COVID - 19

What is coronavirus disease COVID - 19?

- It is an infectious disease caused by the SARS COV-2 virus, the coronavirus that emerged in December 2019
- The coronavirus can spread from person to person

Symptoms of Coronavirus

- Cough
- Fever or chills
- Shortness of breath
- Muscle or body aches
- Sore throat
- New loss of taste or smell
- Diarrhoea
- Headache
- New fatigue
- Nausea or vomiting
- Congestion or running nose

Effects of Coronavirus
- Respiratory failure
- Lung and heart muscle damage
- Nervous system problems
- Kidney failure or death

Variants of COVID 19

According to CDC Centre of Disease Control and Prevention - "A variant is a viral genome (genetic code) that contain one or more mutuations

Types of Variants
1. Variant of Interest (VOI)
2. Variant of Concern (VOC)
3. Variant of High Consequence (VOHC)

1. **Variant of Interest (VOI)**
    - VOI is a SARS COV2 Variant with a genetic capability that affects characters of virus such as disease severity, immune escape, transmissibility and diagnostic escape
2. Variant of Concern (VOC)
    - Rise in transmissibility
    - Increase in fatality
    - Significant decrease in effectiveness of vaccines
3. Variant of High consequence (VOHC)
    - Diagnostic failure
    - Inadequate response of treatment
    - More severe illness
    - Higher n.o of hospitalizations

Variant	Country
Alpha B.1.1.7	England
Beta B.1.351	South Africa
Gamma P.1	US
Delta B.1.617.2	India
Kappa B1.617.1	India
Lambda C.37	Peru
Mu B.1.621	Columbia
Omicron B.1.1.529	South Africa
IHU B.1.640.2	France

Vaccines for COVID-19

There are 4 types of Vaccines
1. Messenger RNA (mRNA) Vaccine

2. Viral Vector Vaccine
3. Protein Subunit Vaccine
4. DNA based Vaccine

1. mRNA Vaccine
   - In this case the messenger RNA's trigger an immune response in our bodies which in turn produces the antibodies and thus protect us from infection.
2. Viral Vector Vaccine
   - It uses another virus to generate antibodies to fight deadly pathogen
   - Ex: Astrazeneca Vaccine - Oxford COVISHIELD
3. Protein Subunit Vaccine
   - The protein subunit vaccine uses parts of a virus that stimulate your immune system to fight off the deadly pathogen
   - Ex : Novavax
4. DNA based vaccines
   - Also known as 3rd generation vaccine
   - DNA based Vaccines use engineered DNA to induce a response against virus
   - Ex : Zydus Cadilla - India

Vaccine	Country
COVAXIN	Bharat Biotech
COVISHIELD	Serum Institute of India
Sputnit V	Russia
COVAVAX	Serum Institute of India
ZyCOVID (World's first DNA based Vaccine)	India
Pfizer - Biotech	USA + Germany
Moderna	USA

Recent innovation:
iNCOVACC
1. World's first nasal COVID Vaccine developed by Bharat Bio tech
2. Key attributes
   - An intranasal vaccine stimulates a broad immune response - neutralizing IgG, Mucosal IgA and T cell response
   - Immune responses at the site of infection ess4ential for blocking both infection and transmission of COVID - 19
   - The nasal rout has the excellent potential for vaccination due to the organized immune systems of the nasal mucosa
   - Non-invasive, Needle free
   - Ease of administration - Does not require trained health workers
   - Elimination of needle associated risks (injuries and infections)

- High complianse highly suitable for children's and adult
- Scalable manufacturing - Able to meet global demand

WHO - Global Centre for Traditional Medicine (GCTM)\

1. Foundation stone of WHO GCTM in Jamnagar, Gujarat
2. WHO is establishing world's first and only GCTM in Jamnagar, Gujarat
3. Aim : To channel the potential of traditional medicine by integrating it with technological advancements and evidence based research
4. Focus - 4 areas
   - Evidence and learning
   - Data and analytics
   - Sustainability and equity
   - Innovation and technology to optimize the contribution of traditional medicine to global health.
5. Need
   - Around 80% of the world population is estimated to use traditional medicine
   - To data 170 out of 194 WHO member states have reported the use of traditional medicine
   - For many millions of people around the work traditional medicine is the first port of call to treat many diseases.

CERVAVAC

1. India's first indigenously developed vaccine for cervical cancer
2. Facts
   - India accounts for about a 5th of the global burden of the cervical cancer
   - 1.23 lakh cases and around 67000 deaths per year
   - Cervical cancer kills one woman every 8 minutes in the country.
3. Developed by SII - Serum Institute of India
4. cost - Rs.200 to 400 a shot
5. Partnership
   - Department of Biotechnology
   - Bill and Melinda Gates Foundation
6. About CERVAVAC
   - It is a quadrivalent Human papilloma Virus (QHPV) vaccine
   - It is effective against atleast 4 variants of HPV (6, 11, 16, 18)
   - It protects women against cervical cancer, vaginal and vulvar cancer and
   - Also protects boys and men against genital warts, penis and anal cancer caused by the HPV virus
   - Two dose for 9 - 14 years
   - Three dose for 15 - 26 years
7. Symptoms of cervical cancer
   - Vaginal bleeding after sex
   - Vaginal bleeding after menopause
   - Spotting or bleeding between periods
   - Heavier or conger heavier menstrual periods than the usual
   - pain during sexual intercourse
   - other abnormal vagina discharge
8. Common risk factors (some)

- Tobacco
- Over weight
- HIV infection
- Immune system suppression
- Long term administration of oral contraceptives
- Having more than 3 full time pregnancy
- Being Pregnant before the age of 17

9. Treatments
   - Surgery
   - Radiation therapy
   - ChemotherapY

Lumpy Skin Disease (LSD)

1. What is LSD?
   - LSD is caused by the Lumpy skin disease virus (LSDV), which belongs to the genus capripoxvirus, a part of the poxviridae family (smallpox and monteypox are also part of same family)
   - The LSDV shares antigenic similarities with the sheeppox virus (SPPV) and the Goatpox virus (GTPV)

2. Spread of LSD
   - It is not a zoonotic disease, meaning the disease cannot spread to humans
   - It is a contagious vector borne disease spread by vectors like mosquitoes, some biting flies, and ticks and usually affects host animals like cows and water buffaloes
   - LSD can also spread through direct contact with the vectors or through contaminated fodder and water.
   - It can also spread through animal semen during artificial insemination

3. How it affects the animals?
   - It affects the lymphodes of the infected animal causing the nodes to enlarge and appear like lumps on the skin
   - The cutaneous nodules 2.5cm in diameter appear on the infected cattle's neck, head, limbs, genetalia and perineum
   - The nodules may later develop into ulcers and eventually develops scabs over the skin

4. Other symptoms
   - High fever
   - sharp drop in milk yield
   - discharge from the eyes and nose
   - Salivation
   - Loss of appetite
   - Depression
   - Infertility and abortions

5. Morbidity - 2 to 45%
   - Mortality - less than 10%

6. Origin and Geographical distribution
   - 1929 - Zambia

      – Subsequently spread to Africa, West Asia, Southeast Europe, Central Asia
- 2019 - South Asia, China

7. It is safe to consume the milk of the affected cattle because it is a non-zoonotic disease.
8. Indian Context
   - India is the world's largest milk producer at about 210 mn tonnes annually
   - India also has the largest headcount of cattle and buffalo world wide
   - Agriculture Ministry data
     – Spread to 15 states, 251 districts and affected over 20 lakh animals till September 2022
     – Cattle deaths - 97000 (Sep 2022)
     – Worst affected states - Rajasthan, Gujarat, Punjab
     – Cattles vaccinated - 1.66 crore

9. Treatment
   - Administer Vaccine
     – Two companies are manufacturing "Lumpi - ProvacInd" indigenously developed vaccine in India
     – "Goatpox vaccine" It is 100% effective against the LSD

Monkeypox

1. Monkeypox is caused by monkeypox virus a member of the orthopoxvirus genus in the family poxviridae
2. It is a zoonotic disease that is transmitted from infected animals to humans
3. Natural host of monkeypox
   – Rope squirrels
   – Tree squirrels
   – Gambian pouched rats
   – Dormice
   – Non human primates
4. Human to human transmission
   – Close contact or direct contact with rashes, scabs or body fluids of a person with monkeypox
   – Extended close contact (more than 4 hours) with respiratory droplets from an infected person includes sexual contact
   – Clothes, Sheets, Blanklets or other materials
   – An infected pregnant person can spread the monkey virus to a fetus
5. Animal to Human Transmission
   – Animal bites or scratches
   – Wild game that is cooked for food
   – Products made of infected animals
   – Direct contact with body fluids or rashes of animals with monkeypox
6. Symptoms
   – Monkeypox symptoms last 2 to 4 weeks and may include

- Fever   Musle aches and backaches
- Skin rash   Headache
- Chills   Tiredness
- Swollen lymkph nodes

7. Types of Monkeypox
   - Central African (Serious illness and death)
   - West African
8. Origin and outbreaks
   - 1970 - Congo Human Monkeypox
   - 2003 - First outbreak outside Africa (US)
   - 2018 to 2022 - Israel, UK, Singapore, US
   - July 14, 2022 - India (First human monkeypox case - Kerala)
   - Till October 2022, 20 confirmed cases in India Kerala (6) + (14) New Delhi
9. Treatment for Monkeypox
   - There is no specific treatment for monkeypox yet
   - Vaccination against smallpox was demonstrated through several observational studies to be about 85% effective in preventing monkeypox

Zika Virus

1. Zika virus spreads by the bite of an infected Aedes species mosquito
2. These mosquitoes bite during day and night
3. The Aedes mosquitoes also known as Ae aegypti and Albopictus also cause illness such an chickengunya and yellow fever.
4. Symptoms : Fever, Headache, Red eyes, Muscle pain, Joint pain
5. Incubation period - 2 to 7 days
6. Spread : According to CDC Centre for Disease control and prevention
   - Zika can be passed from a pregnant women to her fetus and infection during pregnancy cause certain birth defects
   - Zika virus can be transmissible through sex
7. Treatment
   - No specific treatment or medicine for zika virus
8. Effect in humans : Rarely it can result in
   - Guillain Basre syndrome
   - Neuropathy and Myelitis
   - Particularly in adults and children
9. Origin and outbreaks
   - 1947 - Uganda (Monkeys)
   - 1952 - Uganda and Tanzania (humans)
   - 1960's to 1980's Africa, America, Asia and the Pacific
   - 2015 - Brazil
   - 2021 - Kerala India

Tomato Flu

1. Tomato flu is caused by coxsackievirus A16 once infected, the virus produces red and painful blisters on the skin. Hence referred to as "Tomato flu" or Tomato fever"

2. Instead of being a viral infection, Tomato flu might be an after effect of Dengue fever or chicken gunya in children
3. Causes - unknown
4. It is a self limiting disease which is primarily affecting children between 1 - 5 years
5. Symptoms
   - Skin irritation
   - Discoloration
   - Fatigue and tired
   - Abdominal cramps, nausea, vomiting or diarrhea
   - Coughing, fever, sneezing or running nose, joint pain and body ache
6. It is less contagious disease and the mortality rate is low
7. Treatment : Similar to dengue, Chickengunya
8. Affected states : Kerala, TN, Karnataka, Odisha

ENVIRONMENT

1. Bio-diversities by 2030

❖ **World Economic Forum (WEF) has** released a report titled **"BiodiverCities by 2030: Transforming cities' relationship with nature".**

The report is a key output of the BiodiverCities by 2030 initiative.

BiodiverCities by 2030 initiative is led jointly by the World Economic Forum and the Alexander von Humboldt Biological Resources Research Institute and championed by the Government of Colombia. The initiative aims to support city governments, businesses and citizens, to make choices that enable cities to live in harmony with nature by 2030.

❖ **key findings of the report:**
   ➢ Cities contribute nearly 80% to the global economy, but they also account for nearly three-fourths of greenhouse gas emissions.
   ➢ Impact of Nature Loss: Around 44% of global GDP in cities ($31 trillion) is estimated to be at risk of disruption from nature loss.
   ➢ Solution to overcome from Nature Loss: Investing in 'Nature-positive' investments – such as Nature-based Solutions for infrastructure.

❖ **Three steps that will enable cities to live in harmony with nature:**
   ➢ Firstly, cities must embrace a 'systems approach' to urban governance
   ➢ Secondly, cities must reintegrate nature into their planning decisions.
   ➢ Thirdly, action is needed to make nature an attractive investment to financial markets.

2. State Energy & climate Index

NITI Aayog launched the State Energy and Climate Index (SECI). It is the first index that aims to track the efforts made by states and UTs in the climate and energy sector.

The parameters of the index have been devised keeping in mind India's goals for climate change and clean energy transition.

- ❖ **Objectives:**
  - ➢ Ranking the States based on their efforts towards improving energy access, energy consumption, energy efficiency, and safeguarding the environment.
  - ➢ Helping drive the agenda of the affordable, accessible, efficient and clean energy
  - ➢ Encouraging healthy competition among the states.
- ❖ **Parameters:**
  - ➢ Discoms' (Power distribution companies) Performance,
  - ➢ Access Affordability And Reliability Of Energy,
  - ➢ Clean Energy Initiatives,
  - ➢ Energy Efficiency,
  - ➢ Environmental Sustainability,
  - ➢ New Initiatives.
- ❖ **Categorization:**
  - Three groups -- front runners, achievers, and aspirants.
  - ➢ **Top Performers: Gujarat,** Kerala and Punjab
  - ➢ Top three performers among smaller states are Goa, Tripura and Manipur.
  - ➢ Unsatisfactory Performance: States like Chhattisgarh, Madhya Pradesh and Jharkhand.

3. National policy on biofuels -2018 - Amendment?

- ❖ **Bio fuels:**

  Any hydrocarbon fuel that is produced from an organic matter (living or once living material) in a short period of time (days, weeks, or even months) is considered a biofuel.

  Biofuels may be solid, liquid or gaseous in nature.
  - ➢ Solid: Wood, dried plant material, and manure
  - ➢ Liquid: Bioethanol and Biodiesel
  - ➢ Gaseous: Biogas
  - ➢
- ❖ **National Biofuel Policy:**
  - ➢ Target of 20% blending of ethanol in petrol and 5% blending of bio-diesel in diesel by 2030.
  - ➢ Adopting biofuels as an alternative source of energy can significantly
  - ➢ Improve farmers' income,
  - ➢ Generate employment opportunities,
  - ➢ Reduce imports,
  - ➢ Augment waste to wealth creation, etc
- ❖ **Categorization:**
  - ➢ First Generation (1G) bioethanol & biodiesel and
  - ➢ Advanced Biofuels – ethanol, Municipal Solid Waste (MSW) to drop-in fuels.
  - ➢ Third Generation (3G) biofuels, bio-CNG etc.
- ❖ **Raw materials:**
  - ➢ Sugarcane Juice, Sugar containing materials like Sugar Beet, Sweet Sorghum
  - ➢ Starch containing materials like Corn, Cassava, Damaged food grains like wheat, broken rice, Rotten Potatoes

- ❖ **Categorization:**
  - ➢ Bioethanol, Biodiesel, Advanced biofuels, Drop-in fuels, Bio-CNG.
- ❖ **Expected benefits:**
  - ▪ Import dependency - Result in savings of over 4000 crore of forex.
  - ▪ Cleaner environment: By reducing crop burning & conversion of agricultural residues/wastes
  - ▪ Health benefits: Prolonged reuse of Cooking Oil for preparing food leads to health hazard and can lead to many diseases.
  - ▪ MSW Management
  - ▪ Employment Generation
  - ▪ Additional Income to Farmers
  - ▪ Infrastructural Investment in Rural Areas
- ❖ **Recent Amendments:**
  - ➢ Union Cabinet has approved advancing the target of blending 20 per cent ethanol in petrol by 5 years to 2025-26 as well as allowing more feedstocks for the production of biofuels in a bid to cut reliance on imported oil for meeting the country's energy needs.
  - ➢ Encourage research in developing indigenous technologies, boost 'Make in India' and create employment opportunities.

4. Ban on Single use plastics

- ❖ The single use plastic items, which have low utility and high littering potential, have been prohibited, with effect **from 1st July, 2022**, vide **Plastic Waste Management Amendment Rules, 2021.**

Ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice- cream sticks, polystyrene [Thermocol] for decoration;

Plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 micron, stirrers.

The notification also prohibits manufacture, import, stocking, distribution, sale and use of plastic carry bags

- ➢ Having thickness less than seventy-five microns with effect from 30th September 2021, and
- ➢ Having thickness less than thickness of one hundred and twenty microns with effect from the 31st December, 2022.

The ban will be monitored by the CPCB from the Centre and by the State Pollution Control Boards (SPCBs) that will report to the Centre regularly.

- ❖ **Single-use plastics (SUPs):**
  - Single-use plastics (SUPs), or disposable plastics, are used only once before they are thrown away or recycled.
- ❖ **Harmful to the environment:**
  - ➢ Plastic is harmful to the environment as it is non-biodegradable and takes years to disintegrate.

- ➤ But single-use plastics are worse — never breaking down completely, they degrade and become microplastics and continue to pollute the environment.
- ➤ It can take thousands of years for plastic bags to decompose, thus contaminating our soil and water in the process.
- ➤ Birds usually confuse shreds of plastic bags for food and end up eating the toxic debris.
- ➤ Fish consume thousands of tons of plastic in a year, ultimately transferring it up the food chain to marine mammals.

- ❖ **India's plastic waste generation:**
    - ➤ India alone generates 9.46 million tonnes of plastic waste every year, around 43 percent of which comprises single-use plastic. It is a huge problem for India since 40 percent of plastic waste remains uncollected.
- ❖ **Tamil Nadu Government steps:**
    - ➤ Tamil Nadu government has banned the manufacture, storage, supply, transportation, and sale or distribution of single-use plastics.
    - ➤ Tamil Nadu government start this ban from January 1, 2019.

5. Forest (Conservation) Rules 2022

- ❖ **Forest Conservation Act, 1980:**
    It stipulated that the central permission is necessary to practice sustainable agro-forestry in forest areas. Violation or lack of permit was treated as a criminal offence.
- ❖ **Forest (Conservation) Rules, 2022:**
    - ➤ Formation of Committees:
    It constituted an Advisory Committee, a regional empowered committee at each of the integrated regional offices and a screening committee at State/UT level.
    - ➤ Compensatory Afforestation:
    The applicants for diverting forest land in a hilly or mountainous state with green cover covering more than two-thirds of its geographical area, or in a state/UTs
    - ➤ Allows Private Plantations:
    The rules make a provision for private parties to cultivate plantations and sell them as land to companies who need to meet compensatory afforestation targets.
    - ➤ No consent of Gram Sabha needed:
    The new rules state that a project, once approved by the FAC.
    Previously consent of gram sabha, or the governing body in villages in the area, was required to give written consent to the diversion of the forest.
    - ➤ Allows building in Forests:
    Right to construct structures for bonafide purposes including forest protection measures.
- ❖ **Issue:**
    - ➤ Provision in the new rules that proposes to do away with the consent clause for diversion of forest land for other purposes, the Commission had recommended that these rules should be put on hold immediately.

- ❖ **Consent of Gram Sabhas:**
    - ➤ The NCST had pointed out that the FCR 2022 has done away with the provisions to mandatorily seek consent of Gram Sabhas.

6. India's Nationally Determined Contributions

❖ **India's Updated First Nationally Determined Contribution Under Paris Agreement (2021-2030)**

➢ To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, including through a mass movement for **'LIFE'– 'Lifestyle for Environment'** as a key to combating climate change [UPDATED]

➢ To adopt a climate friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development.

➢ To reduce Emissions Intensity of its GDP by 45 percent by 2030, from 2005 level [UPDATED].

➢ To achieve about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, with the help of transfer of technology and low-cost international finance including from Green Climate Fund (GCF) [UPDATED].

➢ To create an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030.

➢ To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management.

➢ To mobilize domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.

➢ To build capacities, create domestic framework and international architecture for quick diffusion of cutting-edge climate technology in India and for joint collaborative R&D for such future technologies.

India's NDC is ambitious, and it is a significant contribution towards achieving the goals of the Paris Agreement.

❖ This update to India's existing NDC is a step forward towards our long term goal of reaching net-zero by 2070.

7. Mission LIFE

❖ An India-led global mass movement to nudge individual and community action to protect and preserve the environment.

It is designed with the objective to mobilise at least one billion Indians and other global citizens to take individual and collective action for protecting and conserving the environment in the period 2022–28.

Within India, at least 80 percent of all villages and urban local bodies are aimed to become environment-friendly by 2028.

Transitioning from throwaway culture to a circular economy is imperative

➢ Environmental degradation and climate change impact ecosystems and populations across the globe

⬇

➢ Without timely action, 800 million to 3 billion people are projected to experience chronic water scarcity due to droughts at 2°C warming.

⬇

> ➤ Global economy could lose up to 18% of GDP by 2050 without urgent action by all.

Mission LiFE was introduced by Prime Minister Narendra Modi—at COP26 in Glasgow on 1 November 2021—as a mass movement for "mindful and deliberate utilization, instead of mindless and destructive consumption"to protect and preserve the environment.

It aims to nudge individuals and communities to practice a lifestyle that is synchronous with nature and does not harm it.

Those who practice such a lifestyle are recognised as Pro Planet People.

❖ India is the first country to include LiFE in its Nationally Determined Contributions:
"India will put forward and propagate a healthy and sustainable way of living based on its traditions and the values of conservation and moderation, including through a mass movement for LIFE, as a key to combating climate change."

8. COP 27

SHARM EL-SHEIKH CLIMATE CHANGE CONFERENCE - NOVEMBER 2022:
❖ **Agenda at COP 27**
> ➤ Mitigation - The world is not on track to achieve the Paris Agreement's stated goal of limiting global temperature rise to 1.5 or 2°C.
> ➤ Adaptation - At COP 26, the Glasgow–Sharm el-Sheikh (GlaSS) work programme was established till 2023 to define the Global Goal on Adaptation (GGA) and set up robust tracking mechanisms
> ➤ Finance - At COP 26, developed countries noted the US $100 billion target of climate finance, first determined in 2009, has not been delivered and is expected to be delivered only by 2023.
> ➤ Loss and Damage - At COP 26, the G77 and China negotiating bloc (representing 80% of the world's population) had demanded for a loss and damage (L&D) finance facility.
❖ **Major takeaway from COP-27 2022 at Egypt:**
> ➤ **Loss and damage fund**
India and other countries engaged constructively and actively on the subject of loss and damage, which refers to destruction caused by climate change-induced disasters.
The new loss and damage fund is a testament to the perseverance and tenacity of climate vulnerable countries and civil society groups.
❖ Loss and damage fund?
The decision by nations around the world to establish a fund to help poor countries hit hard by a warming planet was one of the most significant since UN climate talks began 30 years ago.
❖ Technology:
At COP27, a new five-year work program was launched to promote climate technology solutions in developing countries.
> ➤ **Sharm-El-Sheikh Adaptation Agenda:**
It outlines 30 Adaptation Outcomes to enhance resilience for 4 billion people living in the most climate vulnerable communities by 2030.
> ➤ **Action on Water Adaptation and Resilience Initiative (AWARe):**
It has been launched to reflect the importance of water as both a key climate change problem and a potential solution.
> ➤ **African Carbon Market Initiative (ACMI):**

It was launched to support the growth of carbon credit production and create jobs in Africa.

➢ **The Global Renewables Alliance:**

It brings together, for the first time, all the technologies required for the energy transition in order to ensure an accelerated energy transition.

❖ The next conference (CoP 28) will be hosted by Dubai in 2023.

9. Green Tamil Nadu Mission

Tamil Nadu Government Initiated a scheme under the name of Green Tamil Nadu Mission which was launched on 24th September 2022.

❖ **Objective:**

The Green Tamil Nadu Mission with the lofty goal of planting 265 billion seedlings of native trees over an area of around 13,500 square kilometers in ten years.

The endeavor was initiated at Arignar Anna Zoological Park

❖ **Features:**

In addition to tree-planting programs, the mission will allow the online purchase of seedlings via the Green Tamil Nadu Mission webpage.

An extensive tree-planting initiative will be launched, with the cooperation of a wide range of industries, private groups, and the general public.

In addition, specifics on each planting place are recorded together with geotagged data in order to keep an eye on the number of saplings that survive.

The government approved Rs 21 crore for producing and planting 47 lakh plants this fiscal year and Rs 17.80 crore for 130 lakh seedlings next fiscal year.

In addition, they have introduced electronic vehicles for forest workers, which will aid in increasing the forest cover.

❖ **Benefits:**
  ➢ Reduce Global Warming - Trees and plants helps to regulate climate and reduce global warming
  ➢ Total Green Cover to 33% - Increase forest cover from 23% to 33 %
  ➢ Conservation - Conserve soil and moisture for future
  ➢ Protecting Rural Livelihood - Trees provide numerous socio-economic benefits to the rural community
  ➢ Sustainable Carbon Store - Trees are the best carbon capture technology in the world
  ➢ Increase Biodiversity - More tree diversity.
  ➢ Go Paperless - Save trees
  ➢ Life on Land - SDG-15 - Trees and tree planting can help us as to live sustainably

10. TN Green climate Company

❖ The State Government has set up the Tamil Nadu Green Climate Company (TNGCC) to implement the three key Missions of the Government of Tamil Nadu, viz.,
  ➢ The Tamil Nadu Climate Change Mission
  ➢ The Green Tamil Nadu Mission
  ➢ Tamil Nadu Wetlands Mission.

The Tamil Nadu Green Climate Company has setup a specialized Project Management Unit (PMU) for coordinating and monitoring project activities under all the three Missions in partnership with the Tamil Nadu Infrastructure Fund Management Corporation Limited (TNIFMC).

While these Missions shall be implemented through the Department of Environment, Climate Change and Forests, Tamil Nadu Green Climate Company (TNGCC) will facilitate the involvement of the academia, private sectors and societies for transitioning the State to climate friendly platforms, championing renewable energy, sustainable and resilient infrastructure, agriculture, management and protection of forests, resilience and adaptation to climate impacts.

❖ **Mission:**
➢ Planning, execution and monitoring of the three flagship missions to address climate change
➢ Create strong policy support for climate change, cutting across all sectors of governance and also devise strategies to reduce greenhouse gas emission.
➢ To identify, secure and channelise resources in terms of technological support, funding etc., from national/international donor agencies, institutions of repute and corporate social responsibility (CSR) partnerships.

❖ **Vision:**
➢ To steer Tamil Nadu to a Climate Smart State.
➢ Driving Innovative Climate & Sustainability solutions by transforming Communities, Urban & Rural infrastructure, across the state that are hardest hit by Climate Disruption.
➢ We believe that addressing both Grassroot and Macro Policies with strong Local Climate Actions is critical to an impactful National Sustainability and Deliverance.

❖ **TNGCC Mandate:**
➢ Preparing a comprehensive pathway to a Resilient & Climate Smart Tamil Nadu
➢ Conceptualize and setup financing models for climate project
➢ Identify sectoral priorities like Energy Transition
➢ Assess Tamil Nadu's Climate risks & Vulnerability
➢ Identify sectoral priorities like Transport
➢ Work closely with communities on climate literacy & Grassroots Climate Actions
➢ Identify sectoral priorities like Sustainable waste management
➢ Forge Local, National and Global partnership for Climate Action

11. TN Wetlands Mission

❖ 'Tamil Nadu Wetlands Mission' launched with the objective of ecological restoration of wetlands in Tamil Nadu.

Accordingly, Government of Tamil Nadu decided to implement the Tamil Nadu Wetlands Mission for a period of five years from 2021-2022 to 2025-2026.

❖ **Importance of wetlands:**
➢ Wetlands offer a multitude of ecosystem services which have significant impact on the socio-economic sphere of our lives.
➢ Millions of people depend on wetlands for their livelihood.

➤ They play a critical role in water purification, ground water replenishment, drought and flood management.

➤ Conservation of wetlands is essential for water and food security.

➤ Role of wetlands has become even more important in the light of adverse and serious impact of climate change.

➤ Wetlands are known to be repositories of carbon and are considered as "carbon sinks".

➤ Wetlands are considered to be natural climate regulators as they play an important role in maintaining water balance in an ecosystem.

➤ Innumerable plant and animal species thrive in wetlands. Wetlands also offer refuge to millions of migratory and resident birds and are hotspots for biodiversity.

➤ Importance of wetlands as tourist attraction is also well known.

➤ Protection of wetlands and their conservation is therefore essential for survival of living beings.

➤ Wetlands being an important Carbon and Methane sink and has the potential for reversing the global warming related climate vulnerabilities and risk to the environment and human lives.

❖ **Aim:**

The Mission will identify and map 100 wetlands in 5 years and restore the ecological balance with focus on livelihood options

❖ **Objectives:**

➤ Conserve Biodiversity:

Identify, map and inventorise wetlands in the State of Tamil Nadu and Conserve wetland biodiversity through community based approaches.

➤ Eco-Restoration:

Undertake comprehensive eco-restoration of wetlands in accordance with proven scientific strategies and evidence based methodologies.

➤ Campaigns & Research:

Raise awareness on wetland conservation through public awareness campaigns and Promote research and monitoring of wetland resources for effective management.

❖ **Activities:**

➤ Boundary delineation and demarcation
➤ Catchment conservation
➤ Water Management
➤ Biodiversity Conservation
➤ Sustainable resource development
➤ Institutional Development

❖ **Achievements**

The Ramsar Secretariat has designated **14 new Ramsar sites** in the state of Tamil Nadu during the period July 2022-August 2022 under Ramsar convention which has made Tamil Nadu the state with the highest number of Ramsar Sites in India.

12. TN climate change Mission

❖ Tamil Nadu government has launched Tamil Nadu Climate Change Mission to embark on Climate Change adaptation and mitigation activities.
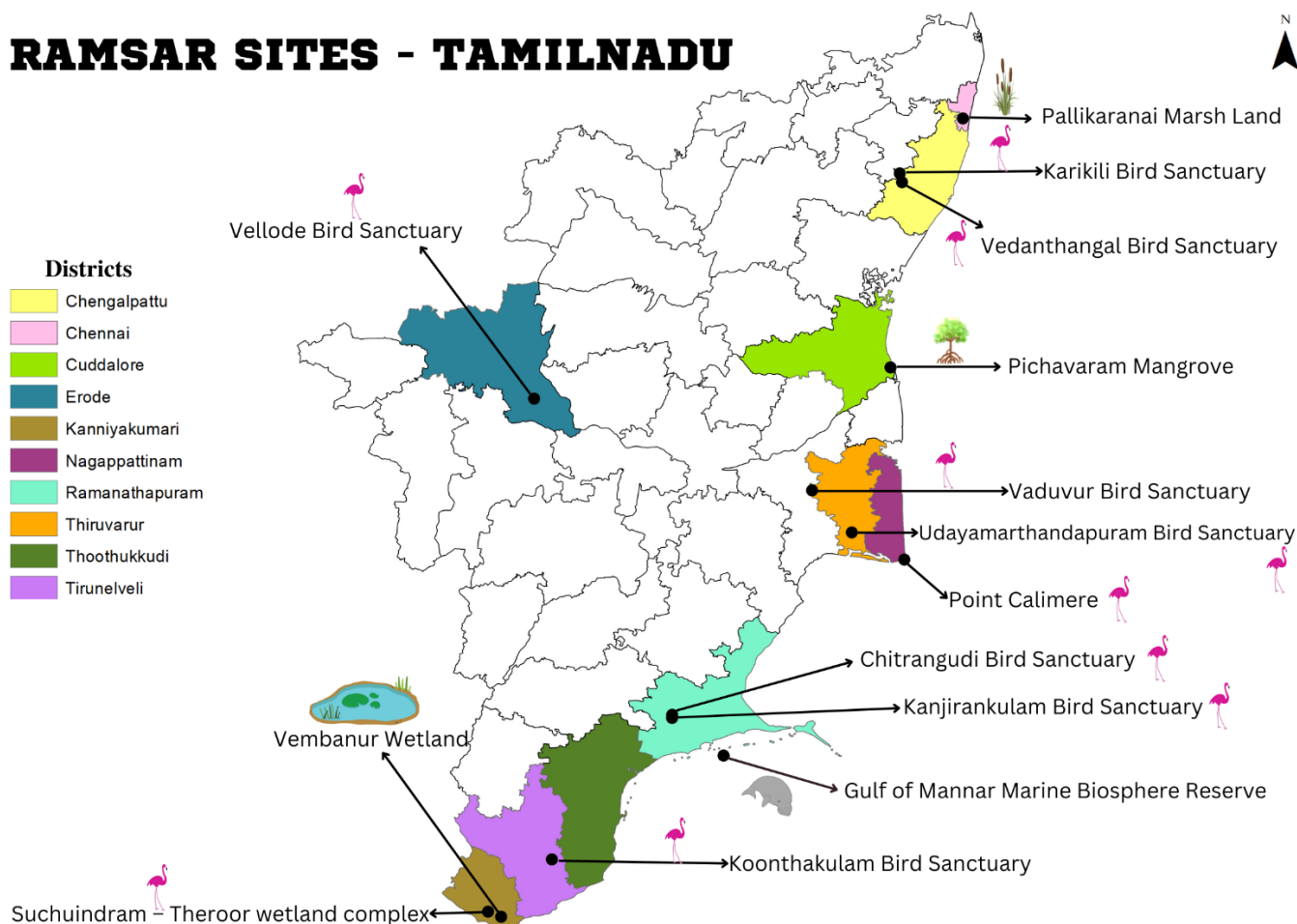
❖ Climate Change is an undisputed reality causing severe impact on the natural environment, human lives, economic assets and activities thus posing an urgent need for comprehensive climate action.

❖ **Mission:**
  ➢ Invest in a transformational planning & programming methodology
  ➢ To expand collective human action
  ➢ Reduce Greenhouse Gases
  ➢ Work closely with stakeholder departments
  ➢ Climate courses
  ➢ As the leader's mission

❖ **Focus Areas:**
  ➢ Sustainable Agriculture & Allied Sectors
  ➢ Water Resources
  ➢ Forest and Biodiversity
  ➢ Coastal Area Management
  ➢ Strategic Knowledge & Climate Literacy
  ➢ Disaster Management & Mitigation
  ➢ Health & Sanitation
  ➢ Enhanced Energy Efficiency & Solar
  ➢ Mission on Sustainable Habitat & Green Mobility
  ➢ Gender and Climate Change
  ➢ Children and Youth for Climate Action
  ➢ Eco-Friendly Technologies

❖ **Projects:**
  ➢ Corbon enrichment programme
  ➢ Climate resilent green temples
  ➢ Rehabitation of coastal habitat
  ➢ Sustainable habitat
  ➢ climate smart villages

The Government of Tamil Nadu initiated an exclusive climate change research centre the **Centre for Climate Change and Disaster Management (CCCDM)** at Anna University to strengthen understanding of climate change and to enhance adaptation capacity.

13. Ramsar wetlands in Tamil Nadu

❖ Ramsar site is a wetland site designated to be of international importance under the Ramsar Convention, also known as "The Convention on Wetlands", an intergovernmental environmental treaty established in 1971 by UNESCO, which came into force in 1975.

RAMSAR SITES - TAMILNADU

Districts
- Chengalpattu
- Chennai
- Cuddalore
- Erode
- Kanniyakumari
- Nagappattinam
- Ramanathapuram
- Thiruvarur
- Thoothukkudi
- Tirunelveli

Pallikaranai Marsh Land
Karikili Bird Sanctuary
Vedanthangal Bird Sanctuary
Vellode Bird Sanctuary
Pichavaram Mangrove
Vaduvur Bird Sanctuary
Udayamarthandapuram Bird Sanctuary
Point Calimere
Chitrangudi Bird Sanctuary
Kanjirankulam Bird Sanctuary
Vembanur Wetland
Gulf of Mannar Marine Biosphere Reserve
Koonthakulam Bird Sanctuary
Suchuindram – Theroor wetland complex

❖ The number of wetlands of international importance in the country to 75 in the 75th year of Independence.

❖ Tamil Nadu has the maximum number of Ramsar sites (14), followed by Uttar Pradesh (10).

14. Nilgiris Tahr Conservation project

Project Nilgiri Tahr:

 ❖ The Tamil Nadu government launched an initiative for the conservation of the Nilgiri Tahr.

 There are multiple references to the Nilgiri Tahr in Tamil Sangam literature dating back to 2,000 years. It was designated as the State animal of Tamil Nadu in recognition of its ecological and cultural significance.

 ❖ **Features:**
> ➢ To develop a better understanding of the Nilgiri Tahr population through surveys and radio telemetry studies.
> ➢ Reintroduce the Tahrs to their historical habitat.
> ➢ Address proximate threats.
> ➢ Increase public awareness of the species.

❖ **Cost:**
  ➢ The project will cost Rs.25.14 crore.
❖ **Implementation:**
  ➢ The project is to be implemented from 2022 to 2027.
❖ **Niligiri Tahr Day:**
  ➢ October 7 will be celebrated as 'Niligiri Tahr Day' in honour of E.R.C. Davidar.
❖ **Challenges:**
  ➢ Potential local extinction due to highly fragmented populations.
  ➢ Invasion of exotic species into the habitat.
  ➢ Forest fires.
  ➢ Over-exploitation of forest resources.
  ➢ Lack of ecological data and understanding.
❖ **Estimates:**
  ➢ It is estimated that there are 3,122 Nilgiri Tahrs in the wild.
❖ **Habitat and Distribution:**
  ➢ The animal inhabits meadows with steep cliffs at elevations between 300 metres and 2,600 metres above sea level.
  ➢ Historically, the Nilgiri Tahr was known to inhabit a large portion of the Western Ghats.
  ➢ But today it remains restricted to a few scattered patches in Tamil Nadu and Kerala.
❖ **Conservation Status:**
  ➢ IUCN - Endangered
  ➢ Wildlife (protection) Act of India, 1972 - Schedule I

15. E-waste management rules 2022

❖ GoI has notified E-waste (management) rules 2022, which will come into force from 1 April 2023 and apply to every manufacturer, producer refurbisher, dismantler and recycler of e-waste.

❖ **Key provisions of the Rules:**
  ➢ Restricted the use of hazardous substances (such as lead, mercury, and cadmium) in manufacturing electrical and electronic equipment.
  ➢ Increased the range of electronic goods covered
  ➢ Targets fixed: Producers of electronic goods have to ensure at least 60% of their electronic waste is collected and recycled by 2023 with targets to increase them to 70% and 80% in 2024 and 2025, respectively.
  ➢ Extended Producer Responsibility Certificates
  ➢ Environmental compensation' to be provided by the companies that don't meet their target.
  ➢ Role of State Governments - Industrial space for e-waste dismantling and recycling facilities etc
  ➢ Role of manufacturers: Make the end product recyclable
  ➢ Role of Central Pollution Control Board: It shall conduct random sampling of electrical and electronic equipment.
❖ **Impact of E-Wastes:**

➢ Toxins' harmful health impact on humans includes damage to the brain, heart, liver, kidneys and skeletal system.

➢ They can also have a significant effect on neurological and reproductive systems, resulting in sickness and birth abnormalities.

❖ **Status of E-waste in India:**

➢ One of the fastest-growing waste streams in the world

➢ 95% of e-waste in India is recycled by the informal sector