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JANUARY -2023 CURRENT ISSUES



**SOCIO
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**TAMILNADU
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**SCIENCE &
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**STATE
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Science & Technology

ISRO Prepares for Record in 2023

Introduction

- The Indian Space Research Organization plans to carry out several scientific experiments this year, including the landing of the Aditya, Chandrayaan-3, Gaganyaan spacecraft and the reusable RLV rocket.

From Sun to Moon

- ISRO is set to land and test the reusable RLV rocket at the Aeronautics Test Center in Karnataka's Chitradurga district in a few months.
- ISRO is also planning to launch the Aditya spacecraft this year to study the Sun.
- Sends Chandrayaan-3 spacecraft to the moon.
- ISRO will launch an unmanned spacecraft by the end of this year as part of the Gaganyaan project to send humans into space.

Ready for achievement

- Skyroot Aerospace, which launched the country's first private rocket last November, plans to launch a satellite this year.
- AgniKul Cosmos, a company founded in the IIT Chennai campus, is set to launch a rocket named Agnibaan
- Pixel CEO Awais Ahmed says, plans to launch 6 hyperspectral imagery satellite commercially

Pros

- Russia is currently not pursuing any space projects due to the Ukraine War
- China's position in the space market is similar
- This is in favor of India

Achievement

- Only developed countries such as Russia, USA and China have succeeded in sending humans into space
- ISRO is going to conduct a major test by the end of this year to achieve this feat
- The platform of the reusable rocket project is to be tested in Karnataka's Chitradurga region
- ISRO successfully launched a privately-built rocket from Sriharikota in November last year and successfully launched foreign satellites as well.
- The Agnibaan rocket, which carries small satellites, is also being tested this year by IIT-Chennai startup AgniKul Cosmos.
- Dhruva Space, which launched two satellites on ISRO's PSLV rocket, is also making private satellites at a cost of Rs 20 crore.

Samudrayaan

Introduction

- Competing with USA, China, Japan, Russia, India plans to take the number one position in the Blue Sea economy

Blue economy

- The Indian Ocean is rich in fish and minerals
- We have the 3rd place in the world in fish production
- This provides employment to nearly 2 crore people
- It generates foreign investment of up to one lakh crore per year

Scope

- The mineral deposits of manganese, iron, copper, etc. in the deep sea are immeasurable
- It is towards that, that the Union Government is now moving
- Preliminary research has found that the Central Indian Ocean has an area of about 75,000 square kilometers containing several minerals such as cobalt, nickel, copper, and manganese.

Samudrayaan Special

- A deep-submergence vehicle that can carry 3 people to a depth of 6000 meters in the deep sea called "Matsya 6000"
- In case of emergency, there is facility of stay up to 96 hours
- The occupants of this cell can stay in the deep sea for up to 12 hours
- Helps to find minerals located at a depth of 1000 to 6000 meters

New laws to control fishermen

- The Union Government has recently introduced various marine related schemes
- Sagarmala Project, Hydrocarbon Project, Deep Sea Research Project
- Indian Marine Fisheries Bill 2021, Indian Ports Bill 2021 has been accomplished
- It is suspected that these have been introduced to control the fishermen who dominate the sea surface
- Many have opined that the deep-sea research program has been brought in to harvest marine resources and the Indian Marine Fisheries Act has been brought in to drive fishermen out of the sea.

A comparison - India

- A peninsula surrounded by seas such as Arabian Sea, Bay of Bengal and Indian Ocean.
- India has a coastline of about 7517 km
- There are 1382 islands
- An area of 23 lakh square kilometers in the Indian Ocean is a great economic zone
- 30% of India's population lives on the coast
- There are about 3827 fishing villages in 9 coastal states

A comparison - TN

- It has India's second longest coastline of 1076 km
- There are about 608 fishing villages in 14 coastal districts of Tamil Nadu
- About 10.50 lakh fishermen live here

Project

- The Samudrayan project initially envisioned a subsea vehicle that could carry three people and travel under the sea.
- In the first phase, deep sea research was carried out in the Andaman atolls at a depth of about 500 meters and it was successful.
- Inspired by that success, a vehicle is now ready that can go to a depth of 6,000 meters and ten times that depth.

- Matsya 6000, the model was designed by the National Institute of Ocean Technology, Chennai, a dedicated deep-sea research vehicle
- Sagar Nidhi, a research vessel, went to the depths of the Indian Ocean and lowered a crawler weighing about 8 tons to a depth of about 5270 meters under the sea.
- It also holds the historic title of being the world's deepest seafaring experiment
- If the Samudrayaan project succeeds by 2026, India will definitely get the number one spot in the world's blue ocean economy.

Nanosat

- AzaadiSat is a nanosatellite weighing 7.2 kg
- Generally, as the weight of satellites decreases, so does the amount of propellant required to pull them
- And the distance it travels will also increase
- 8U CubeSat mounted on a nanosat weighing about 7.2 kg will be deployed in space and used for testing in space.
- Through this research, students can gain information about developing near-Earth space research centers and structures in space by operating them in low-Earth orbit.
- Also, it can be used to know the suitable environment for life in the lower part of the earth and climate changes in space
- The objective of the Space Kidz India is to educate the students about space exploration, satellite operation and DIY construction of satellites without restricting them to just studies and games.

Indian Science Conference

STEM

- The Indian Scientific Conference has been held annually since 1914
- The 108th conference in this series is being held at RTM University, Nagpur
- It will be held under the theme Science and Technology for Sustainable Development with Empowerment of Women
- The conference discusses ways to increase the number of women at higher levels of teaching, research and industry

Green Hydrogen

Aim

- It will be implemented as an incentive program for green hydrogen production while reducing carbon emissions

Export Center

- The National Green Hydrogen Project aims to make India a hub for production, utilization and export of green hydrogen and its by-products.

Target

- A target of 5 million metric tonnes per annum of green hydrogen production has been set in the next 5 years

8 lakh crore investments will be attracted

- 8 lakh crore investment will be attracted by 2030 through the National Green Hydrogen Project
- 6 lakh jobs will be created
- Fossil fuel imports will drop by more than a lakh crore
- Greenhouse gas emissions will be reduced by about 50 million metric tons per year
- Guidelines for implementation of the scheme will be framed by the Union Ministry of Renewable Energy
- Export of green hydrogen and by-products by National Green Hydrogen Programme
- Reducing carbon emissions in the industrial, transport and energy sectors, reducing dependence on imports of conventional fuels
- There will be various benefits including improvement of domestic productivity and employment generation.

India - Among the major countries

- Hydrogen, which can be used as a fuel in vehicles and industries, is produced by water splitting
- Hydrogen is extracted from water by electrolysis using electricity available from renewable resources including solar power.
- Oxygen is obtained as a by-product of this process
- Being declared by major countries of the world
- Germany, UK and Japan are supporting green hydrogen production

Conservation of Biodiversity

All life is equal

- The world population has reached 800 crores
- This earth has as much rights as human beings, from ant to elephant - trees, plants, worms, insects.

Climate change

- Arctic glaciers are melting as the Earth warms
- So they say that even if the sea level rises by 1.5%, many coastal towns will be submerged
- Many cities will be destroyed by climate change

Detriment for Earth

- Human race is the only species that harms planet earth for selfish reasons
- Forests are not harmed by wild animals
- Earth is not harmed by insects or birds
- Earthquakes, storms, hurricanes, volcanoes are only natural disasters
- They wreak havoc on the earth
- They do not pollute the earth's oceans, air, and soil
- It is the human race that discovered and learned to cultivate agriculture that creates plastic waste, carbon waste and nuclear waste that pollute the earth.
- It is said that 15 lakh crores of plastic waste is found in the sea without being decomposed

2022 - Agreement

- A monumental agreement has also been reached in Canada after a seven-hour debate on how to live in peace with nature
- Neither the United States nor the Vatican signed it
- The conference should have been held in Kunming, China by 2020. But it did not happen due to Corona
- So China has held this in Montreal, Canada in 2022
- By 2023, the world must reduce the use of pesticides in agriculture
- Greenhouse gases are responsible for global warming, according to the UN
- 34,000 plants, 52,000 animals and one in eight birds are heading for extinction due to its impact.
- The number of insects is decreasing
- Sea creatures are also dying
- Out of 52 thousand species, 18 thousand species are in danger of rapid extinction
- Our forests are not just forests of trees but also a habitat for wild animals
- 45% of those animals are going towards extinction

Montreal Summit, Canada

- 200 countries participated in the COP 15 summit held in Montreal, Canada
- The purpose of the convention is to protect and preserve biodiversity on Earth from environmental damage
- This is the greatest challenge facing humanity today
- Climate change and rising temperatures are due to mistakes made by developed countries
- As an atonement for that, there has been a demand that appropriate funds should be released as compensation to the developing countries that are progressing
- The funds will be used to avoid climate change and save many lives.
- The agreement signed at the conference calls for the restoration of 30% of the land and 30% of the ocean by 2030 in seven years.
- For this the concerned developed countries should take immediate action
- A contract has been formed by designing it
- By 2030, developed countries should contribute Rs 30,000 crore annually to biodiversity conservation.
- Only by doing this, the temperature in seawater can be maintained within 1.5 degrees Celsius

Brazil

- Brazil is the first biodiverse country in the world
- The Amazon forests there play an important role in this
- There are 50 thousand species in the forest
- No other country's forests have so many species

Tamil Nadu

- Aritapatti village is a biodiversity hotspot in Tamil Nadu
- It is near Madurai Alaghar Hill
- 161 species of birds, species of snakes, pigs, foxes, lizards etc. live there.
- The village is well irrigated for year round farming

- The villagers do not allow anyone to hunt in the forests there
- It is commendable that our Tamil Nadu government has announced it as a Biodiversity Conservation Site in 2022.

GREEN HYDROGEN PROJECT - MINISTRY OF OPERATIONS

- Union Ministry of Renewable Energy

Allocation of funds

- The central government has allocated Rs 19,744 crore for the National Green Hydrogen Project
- Through it, works including construction of infrastructure development and production plants are to be carried out

Key pillars

- Encouraging green hydrogen production and utilization
- Increasing private investments and promoting public-private partnerships.

Objectives

- Reducing carbon emissions
- Greening of motor transport sector, industry and energy sector
- Promotion of domestic manufacturing capacity
- Increasing green hydrogen export opportunities
- Achieving the Paris, Glasgow Climate Change Conference targets
- Promoting innovations in hydrogen production

GOALS (WITHIN 2030)

- Production of at least 5 million tons of green hydrogen per year
- 1 lakh crore savings through reduction in crude oil imports
- Creation of 6 lakh new jobs
- 50 million reduction in carbon dioxide emissions
- 8 lakh crore investment attraction
- 125 gigawatts of energy production

Price reduction

- Green hydrogen is currently in very limited commercial use in India
- Its price ranges from Rs 350 to Rs 400 per kg
- The main goal of the National Green Hydrogen Project is to reduce that price to Rs 100 per kg

Hydrogen

- Hydrogen is one of the elements found in nature
- But hydrogen is not found alone but in combination with other elements
- In order to use hydrogen as energy, it is necessary to separate it from other elements
- Water contains two molecules of hydrogen and one molecule of oxygen
- The process of separating hydrogen from water is simple

Gray, blue, black green hydrogen

- Hydrogen is extracted by electrolysis by passing electricity through water
- Hydrogen gets different names depending on the energy source from which that electricity is produced

Gray hydrogen

- Natural gas will be extracted with electricity produced using petrol, diesel etc
- In doing so, carbon dioxide is released into the atmosphere

Blue hydrogen

- Electricity generated using natural gas, etc. will be extracted
- The resulting carbon dioxide will be released into the ocean rather than the atmosphere

Black hydrogen

- Extraction of hydrogen using electricity generated from coal
- A large amount of carbon dioxide is released into the atmosphere

Green Hydrogen

- Hydrogen will be extracted with electricity produced using renewable energy sources
- The resulting oxygen gas is released into the atmosphere
- This method is more environmentally friendly than other methods

Genetically Modified Mustard

Permission

- DMH-11, a transgenic mustard developed by Delhi University, has been approved by the Union Ministry of Environment for seed production and cultivation for experimental purposes.

Case

- But a case was filed in the Supreme Court on behalf of a consortium of various charitable organizations insisting "India Without Genetically Modified Crops", insisting on stopping the experiment.

Allegation

- Meanwhile, the association has alleged that various rules have been violated in the evaluation and approval process for GM mustard
- RTI information revealed that no health expert participated in the evaluation process for genetically modified mustard
- It has also been revealed that biosecurity regulations have been violated and various deficiencies have been found in the approval process

Denial statement

- In a statement issued in this regard, the Food and Environmental Safety Assessment Report on genetically modified mustard was uploaded on the website of the Ministry of Environment in 2016 and public comments were sought for 30 days.
- In the 146th meeting of the Genetic Engineering Appraisal Committee, an expert committee was constituted on the approval of cultivation of transgenic mustard for seed production.
- The report submitted by the committee was examined in the 147th GEAC meeting and the Ministry of Environment gave approval on October 25 to allow the production of genetically modified mustard seeds.
- Biosafety studies of transgenic mustard were undertaken only after getting no-holds-barred approval from state governments

- The current approval for genetically modified mustard is subject to final approval by the Food Safety and Quality Commission of India
- Transgenic mustard crops are herbicide tolerant
- Therefore, the herbicides sprayed on these crops will affect the welfare of the people
- These crops are not suitable for Indian agricultural environment.

GEAC approval

- The Supreme Court noted that the risk factors of genetically modified mustard are worrisome.
- The Genetic Engineering Evaluation Committee under the Union Ministry of Environment has recently given approval for field trials of a genetically modified mustard crop, DMH-11, for commercial production in India.

Interim ban

- A case was filed in the Supreme Court
- The Supreme Court, which heard the case, issued an interim injunction that no sowing of genetically modified mustard should be done till further orders.
- There were complaints that genetically modified mustard was being cultivated in defiance of the Supreme Court ban

Cultivation

- The seeds arrived at the Mustard Research Center of the Indian Council of Agricultural Research on October 22
- Immediately those seeds were planted
- So far these genetically modified mustard seeds have been cultivated on an experimental basis in a protected environment
- Testing will be done in open fields following environmental clearance
- If the yield does not reach the appropriate instant hybrid test crop quality level, the cultivation of this genetically modified mustard shall not be taken to the next stage.

Hazards

- This paves the way for commercial production
- Hybridization is not a new technology
- At present more than 4000 varieties of mustard are produced in India
- Thus, if GM mustard is allowed to grow in open fields, all mustard varieties will be affected.
- Crops produced from these genetically modified seeds are attractant to herbicides
- So these should not be sprayed with herbicides
- But there is no formal procedure to monitor that farmers do not spray pesticides
- So allowing these crops is likely to cause serious harm to humans and animals

Crude oil

Self-reliance is the goal in the energy sector

- About 85 percent of the country's total crude oil requirement is met through imports
- 50 to 60 percent of natural gas demand is imported
- Meanwhile, domestic crude oil and natural gas production rose by 18 percent in the past year

- About 10 billion barrels of crude oil are used around the world every day.
- Both public sector companies and private companies have increased their purchases of crude oil from Russia
- Purchases by PSUs have increased to 10 lakh barrels per day
- Purchases by private companies increased from 5 lakh to 7 lakh barrels per day

Biodiversity

- It is only during disasters that many realize that the destruction wrought on nature affects humans
- Most natural disasters are caused by human activities and we have a moral responsibility to prevent them
- The 15th Summit on Biodiversity presents that opportunity

Destroying hands

- 69% of all wild animals have declined since 1970
- A recent study found that at least 10 percent of all living species could become extinct by the end of this century
- Biodiversity loss ranks 3rd on the list of 19 global threats in 2022
- More than a quarter of the world's species, i.e. 1 million species, are threatened with extinction
- We cannot help but think that we have nothing to do with the extinction of a rodent somewhere, or a species of mushroom in a mountain forest.
- This conference has emphasized that
- Delegates from 190 countries participated in the conference from December 7 to 21 in Montreal, Canada.
- This conference was not held for 4 years due to various political reasons and corona epidemic

Major goals

- Four goals have been published under the heading of Kunming-Montreal 2050 Goals
- The organization, connectivity and strength of all ecosystems must be maintained, enhanced and restored
- Man-made extinctions must be stopped
- By 2050, the area in the natural environment should be increased
- Genetic diversity must be maintained
- We must ensure that biodiversity is used sustainably and that everything available to people from nature continues
- Economic benefits and other benefits derived from genetic resources, including digital genomes, should be equitably distributed to all
- To create an environment for the implementation of conference resolutions
- This includes economic assistance, capacity building, technology and scientific cooperation, and technology sharing

Financial importance

- One of the most important decisions of this conference
- Targets include reducing the organic footprint by 20% by 2030 and restoring 30% of degraded land by 2030.
- Another key decision is to cut subsidies for biodiversity-destroying activities by \$500 million by 2030.

Major setbacks

- No direct targets have been developed on consumption, invasive species, commercialization of biodiversity, food, pesticides.
- The United States could not participate because the government's resolutions on biodiversity could not be approved by the cabinet
- America's non-participation will surely have an impact on the sense of responsibility of other countries
- Even a conference deemed successful does not include concern for the marine environment
- Important maritime issues such as protecting coral reefs, fixing problems in the fishing industry and stopping deep-sea mining are not discussed.
- Also confusing is the fact that the marine environment is included in the target of protecting 30% of the world's land
- Questions such as whether this includes territorial waters or transboundary areas remain unanswered
- Without nature, we are nothing, says the UN Secretary General António Guterres

Artificial intelligence

In medicine

- Very soon a person with a smart phone can become his own doctor
- Artificial intelligence is going to play a major role in early detection of cancer

In agriculture

- Artificial intelligence can be used from sowing to harvesting
- That means detecting weather disease and pest infestation, watering at the right time, fertilizing just the right amount, and so on.

In the Department of Justice

- Artificial intelligence is making its mark as a court of law and as a lawyer who analyzes the truth and makes judgments

In the field of education

- The Andhra Pradesh government, in collaboration with Microsoft, collected data on school enrollment, performance, gender, socio-economic factors, school infrastructure, teacher capacity during the academic year 2018-19 using artificial intelligence.
- An artificial intelligence analysis of this data predicted early dropouts of 19,500 students in Visakhapatnam district.
- It also advised the government to make necessary changes in the infrastructure of the students as well as insufficient seating facilities in the schools as reasons for dropout in Visakhapatnam district.

Not an enemy to man

- Artificial intelligence needs to input a lot of data
- Fundamentally artificial intelligence is being developed not to remove humans from organizations but to enhance human experiences

Attention and responsibility are essential

- The artificial intelligence we have developed so far has been very useful and helpful
- But we will always remember the scientist Stephen Hawking who said that if we teach too much, it can make problems smarter than humans.

CHAT GPT

- The field of artificial intelligence is developing and is going to make a big revolution in this new year
- The main one among that is CHAT GPT
- CHAT GPT 3.5 Version It is only one month since the birth of this new technology called CHATGPT 3.5 Version

What is CHATGPT?

- When viewed publicly, it looks like a search engine like Google, a smart assistant like Alexa, Siri, and Google Assistant.
- But CHATGPT is not like that. Above all that, it has great wisdom
- Because behind it is artificial intelligence A1, which is an indispensable force in the modern world
- This is what makes CHATGPT do great work
- If we ask one of the search engines like Google and Yahoo, it will grab from the huge piles of data already spread across the web and return only that. So are smart assistant tools
- But CHATGPT is not like that
- Its not just mechanical
- It thinks like a human
- Conversing with the human being, the information obtained through the conversation and the knowledge of the experience will determine the answers perfectly and give the answer. Gives advise. It will also suggest solutions
- You can even get coding to build a website by asking CHATGPT. And that too in a matter of minutes

How does it work?

- CHATGPT works as a conversational dialogue model
- They have created it in such a way that it is close to thinking like a human being
- It works by combining machine learning and deep learning into a neural network

Machine learning

- Machine learning is all about extracting results from a set of data
- Bringing the best data for your questions from the billions of data available on the internet
- Compare predictions and multiple data sets

Deep learning

- Deep learning can provide precise answers with respect to data collection and acquisition of information from run-time.
- Questions asked all over the world like the one you asked, let the answers flow and provide the most relevant information
- By combining these 2 learnings and implementing a neural network like a neuron that executes the brain's command, CHATGPT artificial intelligence is able to think and communicate like a human, they say.

Are there flaws?

- CHATGPT will affect the demand for personnel working in knowledge platforms
- The answers are not accurate
- It is also likely to affect cyber security

Who made it?

- CHATGPT is a type of Chatbot
- GPT -Generative Pre-trained Transformer
- In 2015, a San Francisco-based non-profit company called OpenAI was launched

Uses

- Using CHATGPT to comment on articles, remove grammatical errors, check data, change selected words, etc.
- They are using it in stock trading
- It is also possible to teach new learning methods to those preparing for competitive exams like UPSC, TNPSC etc.
- It is expected to expand its use in other fields including academia and medicine

How to use?

- Very easy. Go to the OpenAI website and login using your email or mobile number
- Then you just need to go into CHATGPT and ask what you need in the chat box and get the results.

Department of Health

Current status

- The Department of Health of Tamil Nadu is uniquely functioning in three Directorates namely Directorate of Medical Education, Directorate of Medical Services & Directorate of Public Health and Disease Prevention
- 19,866 doctors, 38027 nurses, 60181 other medical personnel are working with dedication

International benchmarking

- The population of Britain is 6.7 crore
- Population of Tamil Nadu is estimated to be more than 7.25 crores
- There are approximately 1.25 lakh government doctors in Britain
- But Tamil Nadu, which has a larger population than that country, has less than 20 thousand government doctors
- It is a fact that only one doctor in Tamil Nadu is doing the work of an average of 6 or 7 British doctors
- Despite the large number of doctors in Britain, even patients for emergency cases have to wait 10 or 12 hours on average
- Four lakh people are waiting there for surgery for more than a year and although there are relatively fewer doctors in Tamil Nadu, it is possible to get services even from highly specialized doctors on the same day.
- From the patient's point of view, this is a healthy aspect

Tasks to be done

- Tamil Nadu has a total of seventy one medical colleges including 37 government medical colleges and 34 private medical colleges.
- This is the highest number in the country
- Infrastructure in healthcare does not mean buildings, builders or equipments. It was doctors and nurses
- Therefore, if we want to improve the health sector in Tamil Nadu, we need to strengthen the structure of all government hospitals

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Hazardous electronic waste

Electronic waste products

- China is the largest generator of e-waste, followed by the US and India
- Disused computer equipment, washing machines, air conditioners used in homes and offices, radio sets, television sets, and mobile phones are becoming major waste products.

Mumbai tops

- According to the 2021 study, the amount of e-waste discarded after use is 5.7 crore, which is more than the Great Wall of China.
- In India, Mumbai ranks first, Tamil Nadu ranks second and Andhra Pradesh ranks third in generating e-waste
- About 50 of the 1000 electronic components in a computer are toxic
- When these products are discarded by consumers and thrown in public places, they greatly affect the environment

Recycling

- Only 17% to 20% of the 5.3 million tons of e-waste generated annually globally is recycled and reused.
- About ten lakh tonnes of e-waste brought by sea from foreign countries accumulates in India every year
- According to media reports, 8,000 tonnes of e-waste is dumped in Bengaluru alone every year.
- Internationally, only twenty-eight countries recycle e-waste

Toxic air

- Chemicals such as silicon, lead, mercury, sulphur, and dioxins in discarded electronics react with air and external moisture and heat to release toxic fumes.
- When humans breathe this toxic air, their kidneys, heart, lungs, nervous system etc. are greatly affected
- When such wastes are buried in the land, the water holding capacity of the soil is affected and the land becomes barren due to this.
- E-waste also contains precious metals such as gold, copper, cadmium, cerium, indium, and palladium.
- Statistics show that proper recycling of discarded e-waste can generate higher returns
- Although electronics manufacturers charge service tax along with product price for e-waste management, they often do not engage in e-waste management.

E-Waste Eco Park

- Delhi State Environment Minister Gopal Rai has recently said that India's first electronic eco-park will be set up in Delhi covering an area of 21 acres to reduce e-waste and recycle it properly.

Intimidating new technology defense forces

VSHDRAD

- It is an indigenously developed missile with Russian help to counter China

Key features

- Can easily be carried by humans
- Can be used for short range attack
- It can be used to destroy an aircraft or helicopter that is trespassing on the border
- Attacks up to a maximum distance of 8 km
- It is also capable of targeting targets at an altitude of 4.5 km

Helina Missile

- Indigenously developed anti-artillery missile Helina successfully test-fired on 11 April 2022
- The Helina missile will be used to target and destroy artillery from helicopters
- This infrared guided missile is considered to be one of the most advanced anti-aircraft missiles in the world today.
- It is called third generation missile

Key features

- It can be carried to any place by a sophisticated light helicopter
- It is capable of hitting the target in any conditions, be it day or night
- It was capable of striking from a minimum range of 500 meters to a maximum of 7 kilometers

Agni Missile

- This nuclear-capable missile is currently capable of hitting major cities in China, including Beijing, from here.

State-of-the-art fighter aircraft

- Tejas and Rafale are 5th generation fighter jets currently used by the Indian Air Force
- India is also in the process of developing a new modern aircraft called the AMCA Mark 2 based on the Russian Su 30mki model.

Vagir has arrived

- State-of-the-art new submarine developed in India to counter China's frequent spying in Sri Lankan waters
- Vagir is now king in the Indian Ocean
- Produced in Mumbai in collaboration with France
- The test run will be from February 1

Light artillery

- Light artillery is produced indigenously for use in Ladakh and Sikkim regions
- It is being designed by Larsen and Toubro
- Weighing 25 tons, this lightweight cannon is manufactured with state-of-the-art technology

Artillery gun

- The Next Modern of the Indian Army

- A completely domestic product
- Can be used in desert, mountains and high terrains
- It is a 155 mm/52 caliber mounted cannon
- It is manufactured by Bharat Earth Movers
- Being an automatic type is extra special
- Can shoot up to 45 km
- It has a maximum speed of 80 kmph
- It can carry 7 members. Can fire 3 rounds in 30 seconds. Can fire up to 12 rounds in 3 seconds

AK-203 Rifle

- The AK-203 is a state-of-the-art rifle manufactured in Amethi, UP with the help of Russia
- At present, 7 lakh guns are being produced to replace the indigenously produced INSAS rifles used by the army

Modern drones

- Sophisticated drones are decided to be bought to monitor Chinese encroachments in Ladakh & Arunachal

Brahmos Modern version

- India has test-fired the upgraded Brahmos missile from the SU-30 MKI fighter jet

INS Arihant

- A submarine-launched nuclear-armed missile has a range of 750 km

Submarine INS Vagir

- The Indian Navy currently has more than 150 warships
- The central defense department has set a target to increase the number of warships to 200 by 2027
- Similarly, the navy has 17 submarines
- Of these, 2 submarines are capable of conducting Nuclear attack
- Most of the country's submarines are made by Russia and Germany

Central Government Agreement

- INS Kalvari, the first submarine, was inducted into the Navy in 2017
- INS Khanderi in 2019
- In 2021, INS Karanj and INS Vela were successively inducted into the fleet
- INS Vagir, the 5th submarine in the series, is to be inducted into the Navy
- 6 submarines called Kalwari type are being built with the technical assistance of French company under the Self-reliant India project.
- The Malayalam word kalvari means Tiger Shark
- So far 4 Kalvari class submarines have been inducted into the Navy

Diesel and electric powered

- This submarine is 67.5 meters long
- 6.2 m wide
- 2 meters high
- It runs on diesel and electricity

- Submarines are equipped with sophisticated missiles that destroy enemy warships
- Attacks can be carried out not only on the sea area, but also on air and land areas

350m deep dive

- It sinks to a depth of 350 meters under the sea
- It can stay under the sea continuously for about 2 weeks
- Since it does not make much noise, it cannot be easily detected even if it enters the enemy's sea area
- INS Vagir, the final and 6th submarine of the Kalvari class, will be inducted into the Navy in March next year.

Olive Ridley

Turtle Conservation and Rehabilitation Center in Chennai

- Five species of turtles survive in Tamil Nadu, which has a long coastline
- Notable among these are olive ridley turtles
- The government is taking various measures to protect this type of turtle
- Especially in the past 1974, turtle hatcheries were established

Target

- The center aims to not only protect turtles but also research, collect data and raise awareness about turtle farming.

Functions of the Centre

- Injured turtles are immediately rescued and given appropriate treatment
- Successfully recovered turtles are released back into the sea
- A special investigative system will be set up to get information about the illegal trafficking of turtles and those selling them for commercial purposes
- In coastal areas of Tamil Nadu, turtle nesting sites and traditional migration areas can be found
- The population of sea turtles will be monitored regularly
- Fishermen engaged in sea fishing will also be involved in this monitoring work
- The need to protect the turtles will also be taken to the local people
- All available information on turtles in the coastal areas of Tamil Nadu will be shared with national and international turtle conservation organizations.
- All necessary arrangements will be made for the sea turtles to lay their eggs and give birth to their hatchlings and visit the sea areas freely

Nasal Spray to Treat Covid

- Bharat Biotech, headquartered in Telangana's capital Hyderabad, has produced the Corona vaccine under the name of Covaxin
- This domestically produced vaccine was administered to millions of people across the country during a massive outbreak
- Currently it is being administered as a booster vaccine
- Bharat Biotech has teamed up with the University of Washington to develop a nasal anti-coronavirus vaccine

- It is named iNCOVACC
- It is the world's first anti-coronavirus drug administered through the nose
- The drug will be sold at Rs 375 per dose to central and state governments and Rs 800 to private hospitals.
- 2 doses of prophylactic should be given 28 days apart

12 Cheetahs

Namibia

- 12 Cheetahs from South Africa will be brought to India next month
- Eight Cheetahs were brought from Namibia in September last year as part of the central government's ambitious plan to reintroduce the Cheetah, which had become extinct in India due to habitat loss and over-poaching.
- Prime Minister Narendra Modi unveiled the Cheetahs at Kuno National Park in Madhya Pradesh on his birthday, September 17.

South Africa

- In this case, 12 Cheetahs are to be brought from South Africa in the second phase (7 male and 5 female Cheetahs)
- The MoU was signed between the two countries last week, according to a statement released by South Africa's Department of Forestry, Fisheries and Environment.
- The plan is to send 12 Cheetahs annually for the next 10 years.
- Will be maintained in Kuno National Park.
- There are currently 7,000 Cheetahs living in the world.
- Most of these are in South Africa, Namibia and Botswana.

Thyroid hormone disorder

- As the thyroid gland is the most important organ of the endocrine system, it has a direct influence on the body's growth, development and development.

Thyroid in women

- Thyroid disorders are more common in women
- Common thyroid disorders affecting women fall into two categories: hypothyroidism and hyperthyroidism

Hypothyroidism

- Hypothyroidism is a condition in which the thyroid gland is underactive, and when the thyroid gland does not produce enough thyroid hormones, hypothyroidism occurs.
- It slowly alters most of the body's functions, including metabolism

Symptoms

- Fatigue
- Constipation
- Hypersensitivity to cold
- Dry skin
- Irregular menstrual cycle

- Increase in weight
- bloated face
- hoarse voice

Hyperthyroidism

- This problem occurs due to excessive production of thyroid hormones such as T3 (triiodothyronine) and T4 (Thyroxine) in the body due to excess thyroid secretion.
- Due to the increased secretion of these hormones, the metabolic rate of the body accelerates
- This increases the body's need for nutrients and food
- Inadequate food intake can lead to weakness and weight loss.

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Ways to Protect the Thyroid Gland

- Food that is less in sugar & fat
- reduced intake of particular vegetables
- healthy lifestyle
- Maintaining body weight
- Regular Checkups
- Maintenance

Treasures mistaken for habitat

Ramsar Sites

- Wetlands are nature's gift to us
- These can be divided into two categories: coastal mangroves and mangroves located in inland areas
- India has the largest number of Ramsar sites in South Asia

Tamil Nadu

- 24,684 wetlands have been mapped in Tamil Nadu.
- The total area of wetlands here is estimated at 9,02,534 hectares
- It is 6.92% of the area of Tamil Nadu and Tiruvallur district has more wetlands
- Mangroves are very scarce in Kanyakumari district
- 14 mangrove areas-watersheds in Tamil Nadu have received Ramsar recognition.

Newly recognized Ramsar sites

- Chitrangudi Bird Sanctuary
- Suchindram Theroor Birds Sanctuary
- Vaduvor Birds Sanctuary
- Karikili birds sanctuary

- Pallikaranai wetland
- Pichavaram Mangrove Forest

Pichavaram Mangrove Forest

- This is the special wandering forest of Tamil Nadu
- It is located near Chidambaram
- It is located between two important estuaries namely Vellaaru & Kollidam
- There are also plant species that thrive here that tolerate the salinity of the water
- The crabs, worms, shrimps, small fishes that live here are food more than 60 species of large fishes that live here.

Loss of wetlands in Chennai

- From an area of 12.6 sq km in Chennai in 1893, the lakes have shrunk by almost three-fourths to 3.2 sq km in 2017 due to urbanization.

Pallikaranai wetland

- Pallikarana Swamp is located near Chennai city
- This wetland, which is full of fresh and partly brackish water, acts as an aquifer, protecting Chennai and Chengalpattu districts from flooding.
- There are about 115 species of birds, 10 species of mammals, 21 species of reptiles, 10 species of amphibians, 46 species of fish, 9 species of ruminants, 5 species of Parasites, 7 species of butterflies.
- The area is threatened by encroachment, sewage accumulation, urban waste and drought

Benefits of wetlands

- During heavy rains, wetlands act as large water sinks, absorbing and storing rainwater.
- They provide many benefits such as regulating climate, sequestering carbon, protecting ground water table, preventing soil erosion, providing habitat for numerous flora and fauna species, and preventing flooding.
- They also serve the purposes of irrigation, water supply, water resources, forest trees, biodiversity etc.
- Water is available for agriculture and other needs through ponds, puddle & lake water reservoirs
- 200 times more carbon is dissolved in wetlands than in wetland plants
- More than 61 percent of fish production in India comes from inland waters
- These should not be considered useless wastelands.

Fortified rice

- Fortified rice with nutrients including iron, folic acid and vitamin b12 prepared as fortified beads, fortified rice milled at a ratio of 1:100 to normal rice and distributed through public distribution scheme
- In Phase I, the Central Government has decided to provide fortified rice through Statewide Integrated Child Development Program and midday meal program and the fortified rice has been procured through the Food Corporation of India and is being provided from January 2022.
- In the second phase, the central government has selected 112 districts across the country as pilot districts
- It selected Virudhunagar and Ramanathapuram districts as pilot districts in Tamil Nadu
- Enriched rice is being provided from 1st December 2022 to Public Distribution Scheme, Integrated Child Development Scheme and Mid Day Meal Scheme in these districts.

- In phase 3, the central government plans to provide fortified rice by March 2024 to beneficiaries under the National Food Security Scheme, Integrated Child Development Scheme, Mid Day Meal Scheme and other welfare schemes through the Public Distribution Scheme.

Hypersonic missile

- The Indian Army already has Ramjet-powered BrahMos supersonic missiles
- This missile, developed by India in collaboration with Russia, can travel at a speed of Mach 2.8
- Its distance has also been increased from 290 km to 450 km now
- India, China, Russia and the United States are involved in the development of a hypersonic missile that can travel 5 times the speed of sound
- India's first hypersonic missile test failed in June 2019
- The second test was conducted in September 2020
- The scramjet powered missile took off in 22 to 23 seconds at Mach 6 speed.
- Meanwhile, the third test of an indigenously manufactured hypersonic missile was carried out yesterday at Abdul Kalam Island in the state of Odisha
- DRDO is yet to confirm whether the test was successful or not
- However, reports suggest that the first phase of the hypersonic missile test has been successful but the data on the scramjet performance needs to be analyzed in detail.

Comet

C/2022 E3 (ZTF)

- C denotes Comet
- This is the third comet detected by the Zwicky Transient Facility (ZTF) on 2nd March 2022 (i.e. Fifth Half Moon - A,B,C,D,E).
- It was named C/2022 E3 (ZTF) to denote this
- It can also be called as Green Comet
- It is green in colour.
- The core of this comet is full of carbon molecules consisting of two carbon atoms
- This green light is produced by the chemical reactions that take place here.

The Kuiper Belt and the Oort Clouds

- A comet is usually a solid mass of frozen ice, gases, and dust
- These are leftovers from the formation of the solar system
- As these come closer to the Sun, the frozen gas expands to form a tail-like appearance
- Comets exist in two places around the solar system
- Kuiper Belt, beyond the planet Neptune
- Oort Cloud, which are globular clouds several thousand astronomical miles away from the Sun
- Comets in the Kuiper Belt usually come closest to the Sun once every 100 or 200 years
- Comets in Oort cloud clusters come close to the Sun only once in every 50,000 to 2 or 3 lakh years
- The green comet currently approaching Earth is coming from a Oort cluster of clouds
- Over the past 30 years, a lot of research has been going on about comets
- By studying comets we can learn about the origin of the solar system.

02

Administration of Union & State Government

The world's longest-haul luxury cruise service

Introduction

- Prime Minister Narendra Modi will inaugurate the world's longest-distance luxury ferry service, which will cover 4,000 km in 50 days on 27 rivers, including the Ganga-Brahmaputra.

Trade

- India has 7,500 km of coastline and 14,500 km of waterways.
- But trade by sea and river is only 3.5 percent
- China accounts for 47% and European countries account for 40% of waterborne trade

Ganga Vilas

- Antara Company based in West Bengal capital Kolkata is going to operate this luxury cruise under the name of Ganga Vilas.

Travel

- Starting from Varanasi in Uttar Pradesh, the luxury cruise will travel via Kolkata and Dhaka, the capital of Bangladesh, to Dibrugarh in Assam
- The cruise will stop at 5 tourist destinations including Kaziranga National Park, Sundaravan Forests on the way.
- It has a travel distance of about 1000 kilometers in neighboring Bangladesh alone.

Let's promote diversity in G20 leadership

- India assumes the leadership of G20. This is a huge task
- The world's 20 most powerful countries should be united
- Planning to hold G20 summits in more than 55 cities in India in the next one year
- Then we will show the diversity of India to the world
- The country's culture, specialty cuisines, local products will be showcased to the world

Millets

- Following India's request, the UN has declared this year as the International Year of Millets
- The demand for wheat is increasing all over the world
- Millets will play an important role in overcoming the world's food shortage at this time

Online games : Publication of Draft Regulations

- The government will issue a stamp of registration to the companies that comply with the government regulations
- It should be expressed in online games
- Also, online games contain information about game fees and other expenses, refunds, player-provided information and terms.

- Online game players must register their identity
- Indian address is also mandatory for gaming companies
- Online gaming companies should establish self-regulatory bodies and register with the Union Ministry of Information Technology
- Complaints against gaming and related organizations should be redressed through this self-regulatory body

2023 - UN International Year of Millets

- The UN General Assembly has approved 2023 as the International Year of Millets following India's request.

Purpose

- Prime Minister Narendra Modi has said that the aim should be to make the use of millets a people's movement
- The central government has set a target to make India a hub for millets in the international arena

UN's Target

- One of the UN's Sustainable Development Goals is to end hunger by 2030.
- India decided in 2018 to promote the use of millets to achieve that goal

National Year

- 2018 was observed as National Year of Millets
- Central and state governments have taken measures to increase the production and utilization of Millets

Nutritional grains

- The government is taking steps to popularize millets as nutritious grains among the people

International Startup

- The international small grains market is projected to grow at a compound annual growth rate of 4.5% during the period 2021-2026.
- The inaugural event of the International Year of Millets was held by the United Nations on December 6 in Rome, Italy

Millets in Lunch

- In order to popularize Millets among the people, Union Ministry of Agriculture provided millets lunch to the members of Parliament
- Prime Minister Modi, Lok Sabha Speaker Om Birla, Rajya Sabha Speaker Jagadeep Thangar, Rajya Sabha Leader of Opposition Mallikarjuna Kharge and others participated in the event and ate food made from millets.

Awareness programs

- As the International Year of Millets has started, the Union Sports Ministry will be carrying out activities to create awareness among people about small grains throughout the month of January.
- It will create awareness among the people by conducting videos and seminars with athletes and nutrition experts

Some Millets

- Proso Millet (Varagu)
- Foxtail Millet (Thinai)

- Barnyard Millet (Kuthiraivaali)
- Sorghum (Solam)
- Bajra (Kambu)
- Finger Millet (Raagi)

Importance of Millets

- Rich in protein
- Balanced amounts of amino acids
- High carbohydrates
- Fibers
- Healthy fat
- Rich in minerals like Calcium, Potassium, Magnesium, Iron, Manganese, Zinc
- Vitamin B complex
- Adaptability to climate change
- Ability to grow independently of chemical fertilizers

Remote Voting Machine

Purpose

- Its primary objectives are to avoid migrants returning to their hometowns to vote and to increase voter turnout.

Voter turnout is low

- According to the 2011 Census, the number of intra-state and inter-state migrants was 45.36 crore.
- That number would have increased significantly by now
- They may have to travel to their hometown to vote in their own state assembly elections, Lok Sabha elections, by-elections etc.
- If leave, travel arrangements etc. are not properly arranged, voting gets avoided
- As a result, it is said that the voting percentage will decrease

Remote Voter Registration Centre

- The Election Commission aims to ensure that not a single voter fails to vote
- A remote electronic voting machine was recommended
- This will create a dedicated remote polling center for voters in different states to cast their votes in the elections held in their own states.
- The Election Commission has assured that remote voting machines will be as secure as the electronic voting machines currently in circulation

To build a self-reliant India

Introduction

- Prime Minister Narendra Modi has emphasized that the Indian scientific community should work towards making India a self-reliant country

108th Science Congress

- 108th Indian Science Congress at Nagpur, Maharashtra
- Sustainable development with women empowerment through science and technology

Purpose

- Scientific development should aim to meet the needs of India
- The demand for energy in the country is increasing
- We need to make scientific discoveries that benefit the sector
- About 17 to 18 percent of the world's population lives in India
- Hence, such a huge population growth will lead to a global growth spurt

40th place

- India has moved up to 40th position from 81st position in 2015 in Global Scientific Innovation Index.
- When scientific discovery efforts turn into tangible achievements, it makes a big difference in real life
- India's IT development in the twenty-first century has been astounding
- India is one of the top 3 countries in terms of growth of startup companies globally

Female leadership

- In the context of India's assumption of the G20 leadership, women-led development is given greater importance
- Whether it is the small and micro business sector or the leadership of large start-up companies, the leadership skills of women are evident
- Women's participation in science is increasing

Three principles

- The most sophisticated equipment should be manufactured in India through scientific technology
- New ways to cure diseases should be discovered
- Efforts should be made to reduce post-harvest costs of small grains with the help of biotechnology

Deadline for Appointment of Judges

- The Central Government is ready to consider and approve the names recommended by the High Court Collegium for the appointment of judges within due time.

Collegium practice

- There is a conflict between the Central Government and the Supreme Court over the collegium process of appointing Supreme Court & High Court Judges
- In order to change this practice, the Central Government passed the National Judicial Appointments Commission Act in 2014
- But the Supreme Court struck down that law in 2015
- Because of this the collegium system continues
- A large number of recommendations submitted by the collegium regarding the appointment of judges between divisions are pending with the Central Government.

Rajya Sabha

- Union Law Minister Kiren Rijju has replied that until a new procedure for the appointment of Supreme Court judges is created, the judicial vacancies will continue when a question was raised in the Rajya Sabha.

Judges' opinion

- The collegium procedure for appointing judges is the law of the land

- Opinions against it were not taken into account
- All parties must abide by the laws declared
- In that way collegium procedure should also be followed

What is the deadline?

- If the collegium insists and recommends unanimously, the central government should appoint the judges within 3 or 4 weeks.

Naming History of Tamilnadu

Screaming and Sacrifice

- Let the Madras State go with the British era. It was a time when voices began to be heard that we should take steps to call our state Tamil Nadu
- Even after Malayalis, Andhras and Kannadas seceded from Tamil Nadu, refusal to keep the name Tamil Nadu is not acceptable.
- Periyar said that henceforth Tamils should write as Tamil Nadu both in colloquial and written form
- Shankaralinganar was on a continuous fast with 12 demands, including the demand to name Tamil Nadu.
- But Chief Minister Kamaraj did not accept them
- Sankaralinganar died while fasting
- After that, DMK entered the Legislative Assembly and passed a resolution on 7th May 1957 to rename Madras State as Tamil Nadu.

Continuous efforts

- On 30 January 1961, Socialist Party legislator Chinnadurai brought a resolution to change the name of Madras State.

In Parliament

- This demand has become a talking point in Indian politics due to senior communist leader Bhupesh Gupta
- He filed a private bill in the Rajya Sabha to rename as Tamil Nadu
- He raised the question why the Congress, which named the Tamil Nadu Congress Committee, refuses to name the state Tamil Nadu.
- Anna was then a member of Rajya Sabha and spoke in support of the bill
- Until about 500 years ago, there was no such thing as a united Tamil Nadu
- A member of Congress questioned that there were only Chera Nadu, Chola Nadu and Pandya Nadu
- Answering the question by citing all the evidences from the literature including Paripaadal, Pathiruppathu, Manimekalai Silapathikaram, Anna pointed out that Kambar and Sekkizhar used the term Tamil Nadu.
- Not quite satisfied, a member questioned, "What will you gain by naming Tamil Nadu?"
- Anna immediately argued that what was the benefit of renaming Parliament as Lok Sabha, but the individual bill was not accepted.

Arguments

- No problem arose when the country Gold Coast was renamed Ghana
- In that case, the DMK questioned how a problem would arise in a state
- That resolution also failed due to lack of numerical strength in the assembly

Final victory

- DMK came to power in Tamil Nadu in 1967
- With the same speed, Tamil Nadu took up the issue of naming Tamil Nadu
- A resolution was prepared to change Madras State to Tamil Nadu in both languages, Tamil & English
- On July 18, 1967, Chief Minister Anna brought the resolution in the Legislative Assembly
- Madras is a world renowned name
- Tamil Nadu has to achieve that fame from now on
- Anna recorded the contribution of Martyr Shankaralinganar who lost his life by fasting for the demand to be named Tamil Nadu and the continuous efforts and contribution of Tamilarasu Kazhagam Ma Po Sivagnanam.
- He also clarified that our state will not become a separate country just because of the name change, our state will remain a part of the Indian

Sethu Samudra Project

Location

- The Sethu Samudra Project is the name of the canal to be built across the Adams Bridge connecting the Palk Strait and the Gulf of Mannar.
- This will greatly help the development of Tamil Nadu and the country of India

Project design

- It was created by Commander Taylor in 1860 at a cost of Rs 50 lakhs
- This plan was designed by a committee headed by Tamil Nadu's best expert A Ramasamy Mudaliar in 1955, the Central Cabinet meeting in 1963 and Dr Nagendra Singh High Level Committee formed in 1964.
- Its routes were studied and project reports were prepared in an environmentally sound manner

At a cost of Rs 2427 crore...

- The scheme was sanctioned by Prime Minister Manmohan Singh in 2004 at a cost of Rs 2,427 crore.
- Prime Minister Manmohan Singh launched the Setusamudra project on 2nd July 2005 in the presence of former Chief Minister M Karunanidhi and UPA President Sonia Gandhi.
- The project was stalled while work was underway.

Background of the project

- India has approximately 7500 km of coastline
- If you want to go from one part of the country to another, there is no direct route by sea
- From places like Kochi, Mumbai on the west coast, to Chennai, Visakhapatnam, Kolkata on the east coast, ships have to go around Sri Lanka, covering nearly 400 nautical miles
- It takes thirty hours and costs a lot of fuel
- Sethu Samudra Project is a project based on the idea that avoiding this would be profitable for cargo transportation

Initial attempts

- During the period of British rule, starting from 1760s till 1838, this research went on
- At that time a canal was dug and small ships used to go in it

- In 1860 AD Taylor proposed this scheme again
- Encyclopaedia Britannica mentions that various attempts were made by the British government till 1922
- A committee was formed in 1955 under the leadership of Dr. Ramasamy Mudaliar after the independence of India
- Then in 1963, a project was prepared by the Tamil Nadu government at an estimated cost of Rs 21 crores
- After it was sent to the Parliament, the Lakshminarayanan Committee constituted in 1983 also studied and reported on the Setusamudra project.
- But the then Prime Minister Indira Gandhi did not accept it.

Changed position

- In 1998, Jayalalithaa urged the BJP-led central government to implement the Sethu Samudra Project.
- The demand gained importance when the AIADMK extended its support to the Vajpayee government
- Defense Minister George Fernandes, who was in Rameswaram for an event, assured that the Sethu Samudra project would be completed soon.
- The UPA government launched the scheme on 2nd July 2005 at a cost of Rs 4427 crore.
- Sonia Gandhi, who was the steering committee chairperson of the then Prime Minister Manmohan Singh's coalition government, and then Tamil Nadu Chief Minister M Karunanidhi among others inaugurated the project at a ceremony held in Madurai.
- The AIADMK, which was in favor of the Setu Samudra project till then, started criticizing the project as not having much benefit
- The BJP also objected saying, 'The Ram Bridge is located at the place where it is intended to be deepened in the sea for the project, we will not allow it to be damaged'.
- Vishwa Hindu Parishad organizers, Dr. Subramanian Swamy and others filed a case in the Supreme Court against the project.
- They also got an interim injunction to execute the project
- After this, the sea dredging work for the Sethu Samudra project was stalled
- The project was completely discontinued on July 27, 2009.

Sand dunes

- The sand dunes from Dhanushkodi to Thalaimannar in Sri Lanka are called Rama's Bridge as Adam's Bridge by both Hindus and Muslims respectively
- A background also says that this bridge was formed based on their religious beliefs
- Sand dunes are said to be formed due to collision of waves at rare places like where two landmasses separate or where two seas meet.

Support and resistance

- Fishermen's side says that if the fishermen want to go into the deep sea area and catch fish, the implementation of Setu Samudra Project is necessary.
- Ports like Thoothukudi & Rameswaram are said to grow exponentially
- There are fishermen who say that if this project is implemented, the fishing industry will die completely.
- Even though the sea is being dredged and deepened, sand will accumulate in the same area over and over again.
- It is also said that there will be great difficulty in maintaining the area
- No matter how much the sea is manned for this project, only small ships can go through
- Apart from this, the livelihood of fishermen is affected and the environment is also affected due to the loss of rare species of marine life.

Vallalar Biodiversity Conservancy project to protect helpless animals

Introduction

- On the occasion of Vallalar's 200th birth year, Chief Minister Stalin launched the Rs 20 crore "Vallalar Biodiversity Sanctuary" project to protect helpless animals.

Vallalar Biodiversity Sanctuary

- On the occasion of the 200th birth anniversary of Vallalar, the biodiverse man who said that whenever he saw a withered crop, he withered, a new project called Vallalar Biodiversity Reserves will be launched to help non-governmental organizations and service organizations that care for helpless, abandoned and injured domestic animals.
- Inauguration of "Vallalar Biodiversity Reserves" project by Department of Animal Husbandry, Dairying, Fisheries, Fishermen Welfare
- Under this scheme, Nilgiris-based India Project for Animal Fund Nature provides food, medical facilities and shelter for animals.
- A fund of Rs 2.14 crore has been allocated for Animal Care Trust of Chennai, Madras Animal Rescue Society, Prithvi Animal Welfare Society, Bairava Foundation
- The chief minister distributed checks for Rs 88 lakhs to these foundations as the first installment

Uses

- This amount will be spent on purchasing medical ambulances for animals, building shelters for helpless, abandoned, injured and stray animals, neutering surgery to control breeding and vaccination against rabies.

Let's keep the rivers clean

First National Conference

- The first National Conference of State Water Resources Ministers was recently held in Bhopal under the auspices of the Union Ministry of Jal Shakti
- Rivers and water bodies play an important role in the water environment of the country
- It is important to ensure that they are not spoiled by waste
- The state governments can take forward projects to protect rivers like the National Mission for Clean Ganga

Importance of river

- Rivers have been the cradles of human civilization
- Various civilizations of the world including Mohenjo Daro and Harappa emerged on the banks of the river
- Rivers are the foundation for the origin of mankind and the development of civilization
- Rivers fulfill the water needs of not only the essential needs of mankind such as agriculture and drinking water, but also the water needs of all living things, starting from wild animals to livestock raised by humans.

River pollution

- It is distressing that the venerable rivers, which are the source of soil fertility and protection of humanity, are rapidly getting polluted.
- With rivers becoming polluted, environmental protection is facing increasing risks

Reason

- The primary cause of river pollution is sewage generated by the growing population in residential areas and untreated effluents from industrial development.

Clean Ganga

- The “Clean Ganga” program launched by the central government in 2014 with an allocation of nearly Rs 30,000 crore to clean the river Ganga has yet to make the entire Ganga clean.

Excessive pollution

- Gujarat and Uttar Pradesh states are the most polluting states by mixing sewage into rivers
- Next to these are Maharashtra, Madhya Pradesh, Bihar, Kerala and the list of states that pollute rivers continues.
- This includes construction of wastewater treatment plants that treats 2745 million liters of waste water in 80 cities on the banks of 36 rivers in 16 states at a cost of Rs 6248.16 crore.

Diseases

- People’s health is also greatly affected due to pollution of rivers
- People who use polluted water suffer from various diseases like typhoid, jaundice, kidney damage, skin diseases
- Also the cattle that drinks contaminated river water gets sick
- Pollution of rivers leads to pollution of ground water in riparian areas, making it unfit for agriculture and drinking.
- Marine life is affected as polluted river water enters the sea
- The fish stock in the sea has decreased and the livelihood of lakhs of fishermen has become questionable

Awareness

- It is necessary to create awareness among people to prevent pollution of rivers
- And the government should take strict action against those who pollute the rivers
- Rivers are one of the natural resources we have to leave to future generations
- It is our duty to realize this and protect them from pollution

One Country One Election

- The National Law Commission is seeking the views of political parties on the proposal to hold simultaneous elections to Lok Sabha, state and union territory legislatures.

BJP Ajanta till 1967

- Till 1967, elections to Lok Sabha and state assemblies were held together
- After that, due to the dissolution of some state governments and the formation of new states, elections to the Lok Sabha and the legislatures in many states had to be held at different times.
- In 1983 and in 1999, the possibility of a return to the old practice was considered.
- This was one of the promises of the BJP for the 2014 Lok Sabha elections
- In 2016, Prime Minister Narendra Modi emphasized the importance of holding simultaneous elections across the country
- In 2018, the National Law Commission started hearing the views of political parties in this regard
- But even then, the consensus of the political parties could not be obtained

- Election expenses will come down, ruling parties will be able to reduce election time work and focus on welfare schemes, voter turnout will increase
- Many of the arguments put forward in favor of this scheme are not without justification, as candidates can curb the use of black money, corruption and money for elections.
- For this, the legislative tenure of some states will have to be shortened and some states will have to be extended
- Amendments to the Ordinance Act and the Representation of the People Act will have to be made accordingly
- This requires the consensus of all political parties
- It is not that simple
- For example, DMK, which is in power in Tamil Nadu, strongly opposes this project
- The opposition AIADMK expressed its support

Issues

- Dissolution of popularly elected state governments before their partial term is considered contrary to democratic philosophy
- Also, state parties fear that holding Lok Sabha and Assembly elections at the same time is beneficial to national parties, and parties including DMK have pointed out that this plan is against the federal philosophy of India.
- The central government has an obligation to avoid increasing conflicts between ruling political parties at the center and states and strengthening separatist forces due to the urgency shown in implementing the scheme.

Conclusion

- A decision on the implementation of the “One Country One Election” scheme should be taken only after weighing all the pros and cons and building a consensus among all political parties

The Need for Regenerative agriculture

Introduction

- The Green Revolution that emerged in the 1960s transformed India into a major food exporter on the one hand and the world’s largest absorber of groundwater on the other.
- The UN World Water Development Report states that India consumes a quarter of the world’s groundwater every year at 251 cubic kilometers.
- 90 percent of this water is used for agriculture

Regenerative agriculture

- Regenerative agriculture is a holistic agricultural system that focuses on crop improvement, water quality, air quality, etc
- It improves soil fertility by increasing organic matter, bio-nutrients and biodiversity in the soil
- Improves soil water holding capacity and organic retention
- International scientists believe that the current intensive agricultural system will cause soil degradation and lead to continuous soil loss and that the world’s soil will not be able to feed itself even for the next 50 years.

Regenerative agriculture

- Studies have shown that a one per cent increase in organic matter per 0.4 ha increases the soil’s water storage capacity by over 75,000 litres, a measure of soil health.

- Protecting soil fertility is necessary to limit global warming to more than 2 degrees Celsius and to halt biodiversity loss.

Samaj Pragati Sahayog

- 'Samaj Pragati Sahayog', an organization based in Madhya Pradesh, engaged in piloted regenerative agricultural activities with 1000 farmers in 2000 hectares of land such as composting of crop and animal farm wastes, use of silt, and implementation of natural methods to control pests
- The results of this experiment suggest that 1,500 crore liters of water can be saved by using agricultural practices like crop rotation, dry seed sowing, soil fertility maintenance, drip irrigation, other industrial development, modern wheat cultivation, row sowing, sprinkler irrigation.

Conclusion

- Let's restore the agricultural practices used by our ancestors and cultivate regenerative agriculture
- Because regenerative agriculture is not only the farming method of our ancestors but also includes agricultural technologies

Collegium - National Judicial Appointments Commission

Judge appointment issue

- The three main pillars of democracy are legislature, executive and judiciary
- As per Article 50 of the Constitution, the Judiciary functions independently without executive interference
- The Constitution has laid down various provisions to ensure the independence of the judiciary
- There is a general expectation that judges should act impartially and dispense justice independent of any government
- While the judiciary has been functioning independently, various debates have arisen regarding the appointment of judges

Current status

- In the current context, the central government appoints judges on the basis of the recommendation given by the collegium of senior judges of the Supreme Court

Allegation

- The central government's contention is that the collegium process is not transparent
- At the same time, the Supreme Court accused the Central Government of delaying approval of the Collegium's recommendation.

Origin of the Judicial Appointments Commission

- The Central Government constituted the National Judicial Appointments Commission through the 99th Amendment to the Constitution
- Parliament approved it

Commission's work

- The central government has announced that the National Judicial Appointments Commission will take decisions regarding the appointment of Supreme Court judges, transfer of posts and promotions.

Commission members

- The Chief Justice of the Supreme Court will act as the Chairman
- Two senior judges of the Supreme Court will act as members
- The Union Law Minister will be a member

- The two experts will act as members appointed by a committee consisting of the Chief Justice, the Prime Minister and the Leader of the Opposition in the Lok Sabha

Dissolution of Commission

- On October 16, 2015, the Supreme Court ruled that the 99th Constitutional Amendment to abolish the commission was invalid, stating that the commission was unconstitutional.
- The Supreme Court said that the existing collegium system will continue in the appointment of judges.

Origin of the Collegium

- Collegium is not mentioned anywhere in the constitution
- The collegium was constituted through various judgments of the Supreme Court
- The collegium system was created in 1993 based on the Second Judges case judgment
- The collegium was formed based on the verdict given by the 9-judge bench

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Duty of the Collegium

- The collegium will make recommendations to the central government regarding the appointment of judges
- The Union Law Ministry will examine the proposal and either approve it or send it back to the Supreme Court for reconsideration of the decision.
- If the Central Government approves, the President will appoint the concerned persons as Judges
- This practice continues till now.

Constitutional Laws

- Article 124(2) of the Constitution states that the President shall appoint the judges of the Supreme Court
- It has been informed that the President will also seek the advice of other Supreme Court High Court Judges while making such appointment
- Article 217 of the Constitution states that the President shall appoint High Court judges in consultation with the Chief Justice of the Supreme Court and the Governor of the concerned state.

CONFLICT OF OPINION

November 2022

- Union Law Minister Kiran Rijju alleged that the proceedings of the collegium were not transparent

December 2022

- Vice President Jagdeep Dhankhar said that the time has not passed to bring back the National Commission of Judges
- A bench led by a Supreme Court judge S K Goel said that collegium practice is the current law and it should be followed regularly
- Minister Kiran Rijju announced in the Lok Sabha that the Center has no plans to reintroduce the National Judicial Appointments Commission with necessary changes.

- Pointing out that the central government is delaying the collegium's approval of various recommendations, Chief Justice D Y Chandrachud said that the justice department and the central government should not blame each other in the matter of appointment of judges.
- Minister Kiran Rijju said in the Rajya Sabha that the central government is providing due cooperation to reduce the backlog of cases in the courts and said that the vacancies in the courts will continue to increase unless there is a change in the process of appointment of judges.

January 2023

- The Central Government has informed the Supreme Court that the time limit set for the appointment of Supreme Court High Court Judges has been duly observed
- Stating that the Parliament has the power to legislate according to the Constitution, Vice President Jagdeep Dhankhar said that the National Judicial Appointments Commission Act cannot be repealed by a court order.
- Retired Justice RS Jyoti had given an interview saying that the Supreme Court had violated the Constitution by deciding to appoint judges by itself.
- Sharing the video on Twitter, Minister Kiran Rijju said that the Constitution is the supreme authority

People's Welfare Scheme

- The difference between welfare program and sweets offered for winning elections should be clearly defined
- Population welfare schemes are very carefully planned and their beneficiaries are defined
- Mahatma Gandhi National Rural Employment Guarantee Scheme is an example of this

Freebies

- Freebies are aimed at short term gain
- Announcements like free electricity, free drinking water and massive bank loan waivers continue to be dangerous announcements
- These freebies do not increase the productivity of the state
- And the government's reckless spending and debt burden continue to pile up, a vicious circle

Punjab

- The value of freebies declared in Punjab is 45.4 percent of the state's total revenue
- Due to this, the resulting revenue shortfall, increase in debt and interest on the loan is an additional burden
- 21% of Punjab's total revenue goes to pay interest on loans already taken
- According to RBI, the ratio between State Production and Fiscal Deficit of the following states exceeds the value of 3
- Kerala - 4.1
- West Bengal - 3.5
- Punjab - 4.6
- Rajasthan - 5.2
- Uttar Pradesh - 4.3
- Andhra - 3.2
- TN 3.8

Discounts

- Leading economists have warned that reverting to the old pension scheme for government employees is a controversial decision that will create another debt burden and economic slowdown
- Power tariff concessions also play a major role in the debt burden of state governments.

CM on Field Study

- It is the duty of government employees to work so that the people who seek government offices and hospitals go back satisfied
- Chief Minister MK Stalin had said that he would conduct a study to confirm it
- According to this plan, he will go on a study tour with key ministers, government department secretaries and heads of departments.
- Basic facilities including drinking water, sanitation, services provided by the revenue department, rural development, urban development, road development, livelihood enhancement, youth skill development, public infrastructure facilities, education, medical, child nutrition etc.

03

Socio-Economic Issues

Rs 500, Rs 1000 demonetisation

Introduction

- The Constitution Bench of the Supreme Court, hearing the central government's demonetisation move in 2016, ordered the dismissal of the petitions filed against the move.

Demonetisation

- Prime Minister Narendra Modi announced demonetisation of Rs 500 and Rs 1000 notes on the night of November 8, 2016.

Verdict

- 4 of the 5 judges in the constitutional session ruled that demonetisation will go ahead.
- But only Justice Nagarathna gave a different verdict.
- Justice Nagarathna said that the central government should have implemented demonetisation by law.
- Subsequently, the Constitutional Court ruled that the central government's demonetisation was valid in a ratio of 4:1.

Salient features of the judgment

- The court cannot interfere in the economic policy decisions of the government
- A period of 52 days is sufficient to convert the invalid notes into legal tender
- During demonetisation in 1978, 3 days were given to replace the invalid notes and then only 5 more days were extended

State Education Policy

Opposition of Tamil Nadu

- Entrance test for all degree courses
- Trilingual policy in school education
- The Tamil Nadu government opposes various recommendations of the National Education Policy 2020 such as public examination for classes three, five and eight.

Education Committee

- A 13-member committee headed by retired Delhi High Court judge Murugesan was formed last April to draft the state education policy.
- In addition to academics, writer S. Ramakrishnan, chess champion Viswanathan Anand, Carnatic music singer T M Krishna and other personalities from various fields were present.
- This has led to interest in Tamil Nadu's education policy to include programs for the overall development of students
- The committee, which has received public feedback, is expected to submit its report to the government soon

Central-State Govt

- As every state has unique requirements, the idea that the state governments should decide the education policy cannot be rejected
- But the policy conflicts between central and state governments in education should not affect the education and future of students
- Although most of the universities are funded by the state government, they are dependent on the central government and by extension the central government for approvals of new programs, quality assessment etc.

Grant Committee

- The University Grants Commission has been making regular announcements regarding the implementation of the National Education Policy
- Educationists are warning that Tamil Nadu universities may lose national accreditation due to non-implementation of the National Education Policy.
- If the National Education Policy is not followed, they are insisting that the Tamil Nadu government should implement alternative schemes to ensure the quality assessment of the universities.

Sanjeevi Vault

- Department of Indian Medicine and Homeopathy functioning under the Department of Health and Family Welfare
- Sanjeevi Vault which includes 9 Siddha medicines like Nellikai Legiyam, Uludu Thilam, Pomegranate Manapagu for healthy delivery of pregnant women is being provided to pregnant women in Government Primary Health Centres.
- Siddha medicines are very helpful in treating anemia during pregnancy and for healthy delivery

Boss Scam

- A new type of scam called “Boss Scam” is threatening prominent personalities in the line of online scams in Tamil Nadu
- In recent days in Tamil Nadu, the cyber crime called Boss Scam has been threatening important personalities including top government officials, high police officers, politicians and local body representatives.
- This scam is being done using the name of higher officials, hence named Boss Scam
- Officers working in an office will also receive a call from their superiors through mobile phones
- It says “I am in a consultative meeting with a higher official and I urgently need a gift coupon. Buy shares worth Rs 10,000 and send them. I will pay later.”
- There is also an option to send it via SMS or WhatsApp
- Even if the employee immediately says that he doesn’t know how to buy a gift coupon, the official person on the other end sends a link to buy a gift coupon to his mobile phone.
- Immediately, the employee can buy and send 10 coupons for Rs 1 lakh
- But the employee did not know that it was not his superior who spoke to him
- Using another mobile number similar to the one used by the officer and having the same photo on WhatsApp which the officer usually uses does not raise any suspicion initially.
- The fraudster, who speaks like a superior officer, sends orders through WhatsApp and SMS so that the employees cannot think about it, and the concerned officer will wait only after buying and sending the gifts.
- Only then will the officer realize that there is no chance for the concerned officer to ask for the gift coupon

Migrants

Increase in savings

- India is the top country in which expatriate workers repatriate their savings the most
- The World Bank estimates that India would have received \$10 billion in remittances from overseas Indians by 2022.
- NRI contribution to \$8.9 billion in 2021 has now increased by 12%
- The increase for India is significant compared to 4.9% increase internationally
- It is surprising that repatriation of savings by non-resident Indians is increasing even as the international economy stagnates due to piracy, pandemic and the Russia-Ukraine war.

Remittance

- Savings sent from abroad, known as remittances, mostly flow to Gulf countries on casual manual labor or office workers.
- United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar, Kuwait have the highest contribution from workers.
- Contributions are also coming from countries like USA and UK.
- About 20 percent of India’s emigrants are in the United States and Britain alone
- It is noteworthy that most of them are in highly paid positions
- Since 2015, Gulf countries have reduced their hiring of Indians
- Saudi Arabia allowed entry to 3,10,000 people in 2015, now allowing less than 40,000

2023

- It is the global economy that will determine whether the savings repatriated by migrants will continue
- If the Russian-Ukrainian war ends without epidemics and inflation is brought under control, savings to India will increase, if not decrease.

Foreign Universities in India : Publication of Draft Rules

Eligibility for approval

- There are two criteria for getting permission to start campuses in India
- Should be ranked in the top 500 globally or should be a distinguished educational institution in their country

Conditions

- Foreign universities fulfilling either of these two modules can apply to start their campuses in India
- Foreign universities will be granted permission for an initial period of 10 years
- Then in the ninth year the permit is renewed again after examining certain conditions
- Courses in campuses to be established in India should be conducted as full-time face-to-face classes only
- No online or distance education is allowed
- No course should be offered which would affect the welfare and quality of higher education in India
- Foreign universities are allowed to tailor the admission procedures, fee policies and recruitment norms applicable to their Indian campuses as per their institutional norms.
- But it should be fair and transparent to benefit Indian students.

WEP 2020

- According to the National Education Policy 2020, reputed universities from all over the world have been given the opportunity to start their campuses in India
- The system is designed to provide international standard higher education in India at low cost to students and to make India the best place to study in the world.

Auditing

- Financial and financial related details will be regulated under the Foreign Exchange Act
- The foreign universities are required to submit annual audit reports to the UGC to ensure compliance with the law

Standing Committee

- A standing committee will be set up to examine the details of setting up and running campuses of foreign universities in India
- To ensure that courses are conducted by professors from their premier institutes in Indian campuses
- No compromise should be made on the quality of education imparted on Indian campuses.

Economics Preview Thesis

- The country's economy will grow by 7 percent
- The Central Statistical Program Implementation Department has released the first preliminary economic report for the current financial year

Report

- The country's economy will grow by 7% to Rs 157.60 lakh crore in the current financial year
- The country's exports will be 35.70 lakh crores and imports 46.88 lakh crores
- The per capita income will be Rs 96,522
- Rice production will decrease by 6.1% and crude oil production will decrease by 1%
- Coal production will increase by 17.2%
- Cement production will increase by 10.8 percent and steel consumption by 11.5 percent
- Aggregate savings in banks will increase by 8.9% and aggregate credit by 17%
- Manufacturing sector will grow by 1.6% and construction by 9.1%
- Mining sector output will increase by 2.4% percent
- Agriculture sector will grow by 3.5% and retail sector by 6.4%

International companies

- The Reserve Bank of India has projected GDP growth of 6.8% in the current financial year
- The International Monetary Fund has forecast India's economic growth at 6.8%, the World Bank at 6.9% and the Asian Development Bank at 7% in the current financial year.

Caste wise census in Bihar

- For this purpose, a unanimous resolution was passed in the state assembly in 2018 and 2019.
- The Bihar government has earmarked Rs 100 crore for this census
- According to this, the caste wise census work is going to be conducted in two phases
- In the first phase of the work the number of all households will be counted
- In the second phase of the survey, information on caste, sub-division, religion and economic status of all the people will be collected.
- A mobile application has been developed for this survey work.

Population census : Should not be delayed

- Census in India was conducted for the first time in 1872 during British rule
- In 1948, the Census Act came into force
- Census has been conducted every 10 years since 1951
- However, after the 2011 census, the work that was supposed to take place in 2021 was delayed due to the Corona outbreak.
- Survey work is usually conducted in two phases for about 11-12 months
- Now that the deadline has been extended, the survey work can be carried out after September 2023
- But as the Lok Sabha elections are scheduled for April-May 2024, it is expected that the survey work will start completely after the elections.

Definitely needed

- Neighboring countries like China and Bangladesh have completed their census during the pandemic
- People in India have returned to normal life in the last one year
- And the state assembly elections have been going on as scheduled since the corona period

- This being the case, there is no sufficient reason for the postponement of the Census alone
- Due to the delay in the census, the central and state governments are using the data from the previous census for their plans.
- It is only on the basis of population data that government schemes can be taken to the right people
- In this period of high migration, it is necessary to make schemes for migrants, to take measures to ensure that the population of a state is not affected by the influx of other states, to determine the extent of reservation for Scheduled Tribes and Scheduled Tribes according to their population, to redefine constituencies according to population, and to eliminate disparities in the growth rate between states, census data is essential

Conclusion

- The central government should realize that if the population statistics are not updated, the delivery of government schemes to the right beneficiaries will be affected
- This will also damage the vision of the government
- Therefore, the central government should come forward to carry out the census work which is being postponed without proper reason

China's population is in sudden decline

Problems

- China's population has declined for the first time since 1967
- With this, it is feared that in the country with the largest population in the world, problems such as a disproportionate increase in the elderly population and a decrease in human resources will increase.
- The population of the country has been recorded as 141.18 million in the year 2022
- This is about 8.5 lakh less than the previous 2021 population
- Only 95.6 lakh children were born in the country last year
- This figure was 1.06 crore in 2021
- Last year the country's birth rate was 6.77 per 1,000
- This is less than the previous year
- At that time, children were born at a rate of 7.52 per 1000 people
- In the present context, there are 87.56 crore people in the working age group of 16 to 59 living across the country.
- This is 62% of the total population
- At the same time, about 28 crore people above the age of 60 are living across the country
- This is 19.8% of the population

One Child Policy

- Similarly, 20.98 crore people living in the country are above 60 years of age
- This is 14.9% of the total population
- For years, couples were restricted from having more than one child in order to control the population in China
- Little by little, the Chinese government began to relax its one-child policy

- The Chinese government, which had declared that allowing a second child if the first child was a girl, exempting ethnic minorities from the control, finally abandoned the one-child policy in 2015 and announced that anyone can have two children.
- That limit was increased to three children in May 2021
- Then after two months the government announced that people can have as many children as they want
- However, China has not been able to recover from the effects of the one-child policy that has been in place for years

Antyodaya Anna Yojana

Pradhan Mantri Garib Kalyan Anna Yojana

- Under the Prime Minister's Free Food Grain Scheme, 5 kg of rice or wheat per month from the central pool was distributed monthly to the below poverty line through public distribution.
- 5 kg pulses, wheat and rice per person per month at subsidized prices of Rs.1, Rs.2 and Rs.3 respectively are provided to the beneficiaries of the Food Security Act.
- Apart from that, 35 kg of food grains are distributed to the beneficiaries of Antiyothaya Annayojana scheme every month.

Affiliation

- Now the Pradhan Mantri Garib Kalyan Anna Yojana is being merged with the National Food Security Scheme
- About 81.35 crore people will be benefited by this
- Food and Public Distribution Minister Piyush Goyal has said that this scheme for the poor people is a New Year gift of the Central Government, which will cost the Central Government an additional Rs 2 lakh crore.
- 5.2 crore tonnes of food grains per year is required under the National Food Security Act.
 - Another 4.8 crore tonnes were required for the Pradhan Mantri Garib Kalyan Anna Yojana
- 35 kg of food grains per family per month under Antyodaya Anna Yojana
- 5 kg per person was given under the Pradhan Mantri Garib Kalyan Anna Yojana
- At that time, food grain production, procurement and government stocks were at unprecedented levels
- It seems that the Prime Minister's free grain distribution to the poor has been abandoned and a decision has been taken to provide 5 kg of grain free every month.

Menstrual leave for college girls

- The Kerala state government has made menstrual leave mandatory for college and university students
- Cochin University of Science and Technology in the state introduced this holiday practice
- In other words, in every term of the course, 75% attendance is compulsory, and an additional relaxation of 2% has been announced to the girl students.
- Thus, girl students can write the exam if they have a minimum of 73% attendance record
- During menstruation, women are subjected to various physical and mental sufferings
- Cochin University of Science and Technology has taken this great decision by accepting the request of the students union that they need rest during those days
- It is noteworthy that such a practice has been going on in Bihar for the past 30 years
- In 1991, a two-month long protest was held to emphasize various demands including wage hike. Menstrual leave is also one of the demands

- Two days leave may be taken for menstrual reasons
- This holiday offer is applicable for women upto 45 years of age

ASER Report

- At the national level, the ASER report on educational attainment has been published since 2005.
- The report examines school enrollment, literacy and numeracy among children between the ages of 3 and 16 at the district, state and national levels.
- As schools reopen after months of continuous closure, this first-of-its-kind study predicts the extent of the impact.
- Surveying more than 7 lakh students in 19000 villages across 616 districts of India, the 2022 ASER report on the status of rural education has been recorded.
- In the 4 years between 2018 and 2022, student enrollment in government schools has increased widely.
- Reading and math skills have declined in most states.
- Apart from Mizoram and Jammu & Kashmir, rural government school enrollment of children aged 6 to 14 years has increased in all states.
- As of 2018, West Bengal has topped the list with the highest number of government school enrollments.
- In 2018, enrollment in 7 states was less than 50%
- In 2022, that situation prevailed only in two states, Meghalaya and Manipur.
- Enrollment has increased significantly in Kerala and Uttar Pradesh.
- Enrollment has increased from 65.6% (2018) at the national level to 72.9% in 2022.
- The report points to a sudden decline in interest in private schools, which had been on the rise until 2018.
- Enrollment in rural private schools has declined from 30.9% in 2018 to 25.1% in 2022.
- The 2022 ASER report also indicates a continued increase in enrollment of private schools in the states of Mizoram, Jammu & Kashmir, Madhya Pradesh, Assam and Manipur.
- The report points out that even as enrollment in government schools has increased, the reading and math skills of students in grades 3, 5, and 8 have declined widely across all states.
- 24 states saw a decline in the number of Class 3 students able to study Class 2 subjects
- Similarly, the number of 5th and 8th standard students who know how to read 2nd standard subjects is also reduced.
- When compared to reading ability, math ability is not that bad
- As the learning performance of government school students has declined, students from classes 1 to 8 are taking private tuitions on an increasing basis.
- Tuition and private coaching institutes have increased in 22 states, according to the report
- The report shows that more than half of the students in 5 states receive private tutoring and 73.9% of government school students receive private tutoring in West Bengal.
- E-learning has reached all areas including rural areas
- The report suggests that the level of technical availability that initially hindered e-commerce infrastructure has now spread to the villages.
- The number of mobile phones has increased from just 36% of households before the policy epidemic to 74% by 2022.
- According to statistics compiled by ASER researchers, 9 out of 10 households have mobile phones and Internet connectivity.
- The ASER report is promising
- At the same time, future generations will benefit from enrollment only if the infrastructure and teaching capacity of rural government schools is ensured.

Learning disabilities

ASER

The message of the report

- After 2018, the report is published only in 2022
- During the intervening period, a survey of 30,737 students between the ages of 3 and 16 was conducted in 920 villages in 31 districts of Tamil Nadu.
- The proportion of fifth graders who were able to read second grade Tamil textbooks dropped from 40.8 percent to 25.2 percent.
- Only 11.2 percent of third-graders mastered the basic math skills of subtraction and 14.9 percent of fifth-graders mastered division.
- The proportion of fifth graders who could read English phrases dropped from 37.2 percent to 24.5 percent.
- The summary of the ASER report is that after the corona period, students' learning activities, reading skills, basic math skills etc. are not significant.
- Schools are not functioning during Corona. Therefore, the reality is that the online classes conducted as per the guidelines of the government did not give the expected results.

Background of inadequacies

- It cannot be denied that there is an inadequacy among students in basic reading and basic math activities, even before the corona era
- There are various social reasons why a student is not competent in basic literacy and numeracy such as being the first generation to learn, family economic environment, parental indifference, one-teacher and two-teacher schools, teachers' workload.

Required Corrections

- Students from class one to three have difficulty in introducing alphabets and their recognition
- Identification of all the 247 letters in the Tamil alphabet, the difference between Short Vowels (Kuril) and Long Vowels (Nedil) and its pronunciation are also inadequate.
- The Department of School Education of the Tamil Nadu Government has been carrying out various programs since last year like 'Illam Thedi Kalvi', 'Ennum Ezhuthum', 'Naan Muthalvan', 'Puthumai Pengal', 'Kalai Thiruvizha', 'Book Exhibition' and 'Nam Palli Foundation'.

All India Survey of Higher Education

ST Student Development

- Enrollment of tribal students in higher education has grown by 40% since 2014-15, according to the AISHE report.
- There has been a significant increase in higher education enrollment of SC and OBC students
- In 2020-21, 4.13 crore students were enrolled in higher education across the country
- Out of this 14.2% belong to SC category, 5.8% belong to ST category and 35.8% belong to OBC
- The remaining 44.2% belong to other communities.

Overall enrollment increased by 20.9%

- GER
- 2018-19 : 2.7%
- 2019-20 : 3%

- 2020-21 : 7.4%
- Since 2014-15, overall enrollment in higher education has grown by 20.9%
- Out of 4.13 crore students enrolled in higher education in 2020-21, 2.12 crore were male students and 2.01 crore female students.

High educational enrollment rate 27.3%

- The overall higher education enrollment rate stands at 27.3%
- GER is calculated based on the number of 18- to 23-year-olds enrolled in colleges in the total population
- As far as institution-wise admissions are concerned, 73.1 per cent got admission in government universities and 26.3 per cent in private higher education institutions.

Ranks 5th in number of colleges

- The state of Uttar Pradesh has the highest number of colleges in the country as revealed by AISHE 2020-21
- II - Maharastra
- III - Karnataka
- V - TN
- Rajasthan, Madhya Pradesh, Andhra, Gujarat, Telengana & Kerala occupies first 10 places

AISHE Report

- The Union Ministry of Education has been conducting the AISHE survey since 2011 to collect and publish various information including location, student enrollment, faculty details, infrastructural facilities, financial information in all higher education institutions in the country.
- This information is collected online from higher education institutions across the country
- Uttar Pradesh has the maximum number of colleges in the country with 8114 colleges
- That means there are 32 colleges per one lakh population in the state
- Maharastra - 4532 colleges (34 colleges per one lakh population)
- Karnataka - 4233 collges (62 colleges per one lakh population)
- Rajasthan - 3694 collges (40 colleges per one lakh population)
- TN - 2667 collges (40 colleges per one lakh population)

Only 2.9% colleges have Ph.D

- Most colleges across the country offer only undergraduate degrees
- 55.2% colleges offer PG degree
- 2.9% colleges offer PhD course
- 35.8% colleges offer only one course, 82.2% of which is private institutions
- 30.9% colleges offer only B.Ed course
- 23.6% colleges have enrollment of less than 100 students
- 48.5% colleges have enrollement of students from 100 to 500
- 65.1% colleges have enrollment of less than 500 students
- Only 4% of colleges have students more than 3000 in number

21.4% Govt Colleges

- Out of 41,600 colleges, 8,903 are govt colleges
- Govt aided colleges - 5,658 (13.3%)
- Private colleges - 27,039 (65%)

Joshimath city

Char Dham

- The state of Uttarakhand, known as the land of the gods, is situated in the Himalayas
- Rivers including the Ganges and the Yamuna originate from the Uttarakhand snow peaks
- There are holy places of Gangotri Yamunotri at Char Dham

Disaster effect

- Uttarakhand continues to face natural calamities including landslides and floods due to climate variability and urbanization
- In 1970, due to an eruption in Uttarakhand, the Alaknanda river flooded and many villages were submerged.
- The 1991 earthquake killed 768 people
- 1998 Malwa landslide kills 255
- 100 people died in the 1999 Chamoli earthquake
- In June 2013, a cloudburst triggered floods and landslides
- 5700 people died in this
- In February 2021, a glacial eruption swept away the Vishnu Ghat hydroelectric power station built on Tapovan dam

Joshimath

- On behalf of the National Thermal Power Corporation, the works of the Vishnughat hydro power plant project at Tapovan Dam have been intensified
- A tunnel of 16 km under the town of Joshimath on the Rishikesh-Badrinath National Highway was made
- The mine is said to be producing high-pressure gas and causing explosions in the upper terrain
- For the past few weeks, various parts of Joshimath have been witnessing land eruptions and cracks in houses.
- Environmentalists say that Joshimath city is being razed to the ground due to the projects of the National

Electricity Company, and the lives and properties of the people living here are threatened, and they said that the power company projects should be stopped.

Burial City

- The city of Joshimath in Uttarakhand is slowly sinking into the earth

Beautiful little town

- Joshimath is a beautiful small town located in Chamoli district of Uttarakhand, nestled in the Himalayas.
- About 4000 families live in Joshimath town, which is 6150 m above sea level
- Joshimath is the gateway to famous Hindu shrines like Badrinath and the Sikh shrine of Hemkund Sahib
- The city is the starting point of Himalayan trekking routes and the starting point for visiting Himalayan tourist destinations.
- As the city borders China, it is also a major military base

Cracked houses and roads

- In the last 15 days, more than 500 houses, shops and roads have cracked here
- A temple has been buried in the soil

What is the reason?

- It must be said that it is a joint conspiracy of man and nature
- Unplanned constructions such as hydropower projects and mega projects such as national highway expansion are testing the city of Joshimath.
- Erosion caused by the Alaknanda river that flows adjacent to the city is said to be the cause of the current condition of the creeks in the ground.

Warning since 1976

- The Mishra Commission set up by the government in 1976 had warned that the construction work here should be controlled
- Sensing the tragedy, the government is quickly getting down to business
- The State Disaster Response Force along with the National Disaster Response Force, Firefighters and the Army are also on standby
- Helicopters have also been prepared for rescue operations