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GS 2 : Polity, Governance, International Relations

1. South Asia's healthcare burden

Background:

- Despite recording comparatively lower infection and mortalities in the first wave of the pandemic, **South Asia has been devastated from the second wave.**
- **India, the largest country in South Asia, has been the most affected.** The “super spreader” events, fragile health infrastructure, citizens not following health protocols, and logistical mismanagement have resulted in record infections and death rates during the second wave.
- **Pakistan, Bangladesh, Nepal and Sri Lanka also remain vulnerable** to more infections and deaths due to the pandemic.
 - Bhutan is the only exception so far in South Asia. Bhutan's success in tackling the pandemic stems from a well-funded and prepared public health system with stringent measures, responsible citizenship, and an accountable government.

Details:

- The article discusses some of the **common lacunae in the health systems of the South Asian countries** of India, Pakistan and Bangladesh, which have contributed to worsening the impact of the second wave of the COVID-19 pandemic.

Concerns:

Inadequate public health infrastructure:

- As against the World Health Organization's (WHO) prescribed standard of 1 doctor for 1000 people, **India's public healthcare sector has been operating at 0.08 doctors per 1,000 people.**
- India has **only half a bed available for every 1,000 people**, which is inadequate even for normal scenarios. Bangladesh and Pakistan have a bed to patient ratio of 0.8 and 0.6, respectively, and a doctor availability of less than one for every 1,000 people.

Low state investment into health sector:

- **State investment in the health sector remains highly inadequate.** Major public sector investments in India, Pakistan, and Bangladesh have been **towards infrastructure and defence, with health taking a backseat.**
 - India spends a little over 1% of the Gross Domestic Product (GDP) on the health sector. While India has the world's third-largest military expenditure, its health budget is the fourth-lowest.
 - In Pakistan, while the defence budget was increased despite the pressure of the pandemic, the spending on health has remained stagnant.
 - The gross underfunding of the health sector over the years has led to a crumbling public healthcare system in Bangladesh.

High out of pocket expenditure:

- **The booming private medical sector at the cost of the public health sector** has resulted in very high out-of-pocket health expenditure.
- While **ideally, out-of-pocket expenditure should not surpass 15% to 20% of the total health expenditure**, it is 62.67%, 73.87% and 56.24%, for India, Bangladesh and Pakistan respectively.

Skewed distribution of healthcare facilities:

- Despite housing a large rural population, the existing health facilities largely cater to the urban population. **The rural areas have limited access to quality and affordable healthcare facilities.**

Recommendations:

- The South Asia countries must prioritize investments in healthcare systems and **step up investment in their public healthcare sectors.**
- The countries must also work towards **broadening equitable access to healthcare through universal health coverage schemes.**

Conclusion:

- Given the high chances of another pandemic wave, South Asian countries via a well-thought-out vision and backed by requisite political commitment need to direct special attention and resources towards strengthening the health systems. The reforms should **make the public healthcare sector sustainable and pro-poor.**

2. Shun vaccine nationalism, says UNGA president-elect

Context:

In a first for the Maldives, Foreign Minister Abdulla Shahid has been elected the President of the UN General Assembly for 2021-22.

Details:

- The president-elect raised his **voice against vaccine nationalism** stating that it would destroy countries' efforts to eradicate the pandemic.
- He termed the **disparity in vaccination coverage** in developed countries and the rest of the world **unacceptable**.

Note:

- The newly elected UNGA president said that **Human Rights would be a central theme** at the UNGA.
- He asserted that he, as President, would **refrain from taking sides on contentious issues such as Jammu and Kashmir** and remain impartial.
- He thanked India and **acknowledged the fact that it was one of the first countries that came out in his support**.

3. Central deputation of officers very low, DoPT tells States

What's in News?

The Department of Personnel and Training (DoPT) has addressed a letter to the State governments, cautioning them that not sending enough officers may affect future cadre review proposals.

Issue:

- According to DoPT, States have not been nominating enough officers for Central deputation.
- According to an official of Uttar Pradesh cadre, it was not that the officers were not willing to go on Central deputation but the **no-objection clearance was hard to come by**.
- The final clearance for central deputation is given by the Chief Minister.

Central deputation of officer:

- Every year, the Centre selects officers from an offer list of officers of the **All India Services (IAS, IPS, IFS)** that are **willing to go on Central deputation**.
- According to **Rule 6 (1) of the IAS (Cadre) Rules, 1954**, 'A cadre officer may, **with the concurrence of the State Government concerned and the Central**

Government, be deputed for service under the Central Government or another State Government or under a company, association or body of individuals, whether incorporated or not, which is wholly or substantially owned or controlled by the Central Government or by another State Government.

- **In case of a disagreement, the Central government will decide the matter and the State Government or State Government concerned will abide by the decision of the Central Government.**

4. The promise and perils of digital justice delivery

Context:

- The e-Committee of the Supreme Court of India recently released its **draft vision document for Phase III of the e-Courts project.**

Background:

The e-Courts project:

- The e-Courts Project was conceptualized on the basis of the **“National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary - 2005”** submitted by e-Committee, Supreme Court of India with a vision to transform the Indian Judiciary by ICT enablement of Courts.
 - E-committee is a body constituted by the Government of India in pursuance of a proposal received from the Hon’ble Chief Justice of India to constitute an e-Committee to assist him in formulating a national policy on computerization of Indian Judiciary and advise on technological communication and management related changes.
- The e-Courts Mission Mode Project, is a pan-India project, monitored and funded by the Department of Justice, Ministry of Law and Justice, Government of India for the District Courts across the country.
- The e-Courts project envisages:
 - To **develop, install & implement decision support systems in courts.**
 - To **automate the judicial processes** to the extent possible.
- Phases I and II of the e-Courts project had dealt with the digitisation of the judiciary, i.e., e-filing, tracking cases online, uploading judgments online, etc.

Potential benefits of digital justice delivery:

Increased transparency:

- Automation of judicial processes can help increase the transparency of the process by increasing the **accessibility of information to its stakeholders**.

Enhance judicial productivity:

- It will help enhance judicial productivity, both qualitatively & quantitatively by **streamlining judicial processes**.
 - Phase II of the e-Courts project saw the development of the National Service and Tracking of Electronic Processes, a software that enabled e-service of summons.

Efficient and time-bound delivery of justice:

- By enabling efficient & time-bound citizen-centric services delivery it can help **rectify the long delays and difficulties for ordinary litigants** and hence help ensure delivery of justice. It will help make the justice delivery system affordable, accessible, cost-effective, predictable and reliable.
 - Around 3.27 crore cases are pending before Indian courts, of which 85,000 have been pending for over 30 years.

Continued access to the judiciary:

- The digital justice delivery has helped ensure judicial accessibility despite the lockdowns induced by the COVID-19 pandemic. Notwithstanding some hiccups, the Supreme Court and High Courts have been able to function online despite physical courts being forced to shut down.
- The **digital functioning of the courts enabled access to lawyers and litigants despite the lockdowns in place**.

Details:

- Phase III of the e-Courts project continues with its commitment to the **digitization of court processes**, and plans to **upgrade the electronic infrastructure of the judiciary**.
- The vision document also envisages **large-scale data collection exercise** which could be used for future policymaking and help to make suitable interventions to address existing challenges in the system.
- The draft document proposes a **360-degree approach to data collection**, wherein a 360-degree profile of each person would be created by integrating all of their interactions with government agencies into a unified database.
- The draft vision document for Phase III **proposes an “ecosystem approach”** to justice delivery, under which it suggests a “seamless exchange of information” between various branches of the State, such as between the

judiciary, the police and the prison systems through the **Interoperable Criminal Justice System (ICJS)**.

Concerns:

- While the objective of digitization of the judiciary is a welcome move, certain recommendations in the draft vision document for Phase III are a point of concern.

Will further exclusion and inequity:

- Given the fact that the first layer of data creation happens at local police stations, which have historically contributed to the **criminalization of entire communities by labelling such communities as “habitual offenders”**, the proposed Interoperable Criminal Justice System (ICJS) will likely exacerbate existing class and caste inequalities that characterise the police and prison system.

Threat of profiling and surveillance:

- Given that the data collected, shared and collated through the e-Courts project will be housed within the Home Ministry under the ICJS, henceforth **localised data will become more centralized. This increases the threat of profiling and surveillance.**
- The 360-degree approach envisaged in the draft document poses the threat of targeted surveillance.

Privacy concerns:

- The data collection combined with extensive data sharing and data storage is a cause for concern given its possible **implications on the Right to Privacy of the citizens.**
- The integration of data allows the creation of an integrated database on a person with a variety of information relating to that individual, some of which may be purely civil, commercial or personal in nature.
- The **lack of a data protection regime law in India** further raises concerns over possible infringement on the right to privacy.

Recommendations:

- The article proposes **abandoning the ecosystem approach.** The e-Committee must prevent the “seamless exchange” of data between the branches of the state that ought to remain separate.

- The article also proposes that the e-Courts must move towards **localisation of data**, instead of centralization given the potential threat that such centralization poses.
- Given the potential advantage of data in addressing challenges in the judicial system, instead of altogether abandoning data collection, rather there is the need to focus on a system that can provide **anonymous, aggregated, and statistical information about issues without identifying the individuals**. This could be made possible by encouraging uniformity and standardisation of entry fields.

Conclusion:

- Technology can indeed help revolutionise India's ailing judicial system, however, it cannot be an end in itself and the **use of technology needs to be ensured within the constitutional framework of the fundamental rights of citizens**.
- Phase 3 of the e-Courts project must devise ways to harness technology for service delivery without increasing surveillance risks

5. U.S. Senate passes huge innovation Bill

What's in News?

The U.S. Senate has passed the industrial policy bill.

Details:

- The Bill represents the largest investment in scientific research and technological innovation in generations.
- It seeks to pump more than \$170 bn into **tech research to counter the growing economic threat from China**.
- The proposal aims to address a number of technological areas in which the U.S. has fallen behind China.
 - The Bill allocates \$52 billion in funding for a previously approved plan to **increase domestic manufacturing of semiconductors**.
 - It authorises \$120 billion over five years for **activities at the National Science Foundation** to advance priorities, including research and development in key areas such as **artificial intelligence and quantum science**.
 - And, it facilitates **tie-ups between private firms and research universities**.

GS 3 : Economy, Science and Technology, Environment

6. Encouraging accord

- In the context of the Finance Ministers from the Group of Seven (G7) nations having reached a landmark agreement on setting a **global minimum corporate tax rate**, this article discusses the **potential advantages** of such a policy.

Details:

- The Group of Seven nations have backed a **minimum global corporation tax rate of at least 15%**.
- They also seek to put in place measures to ensure that taxes are paid in the countries where businesses operate based on the **principle of 'Significant Economic Presence'**.

How would a global minimum tax work?

- The global minimum tax rate would **apply to overseas profits of a multinational**.
- The envisaged framework allows individual governments to set whatever local corporate tax rate they want.
- But if companies pay lower rates in a particular country, their **home governments could "top-up" their taxes to the minimum rate**, thus eliminating the advantage of shifting profits.

Reasons for the move:

- A global minimum corporate tax will allow the major economies to **discourage multinationals from shifting profits – and tax revenues – to low-tax countries**.
- This proposal from the major economies aims to reduce tax base erosion without putting their firms at a financial disadvantage, allowing competition on innovation, infrastructure and other attributes.

Significance:

Reduce tax base erosion:

- This measure will **help close cross-border tax loopholes** used by some of the world's biggest companies, thus will help **limit base erosion and profit sharing (BEPS)**.

- Increasingly, income from intangible sources such as drug patents, software and royalties on intellectual property has migrated to the low tax jurisdictions, allowing companies to avoid paying higher taxes in their traditional home countries.
 - As per some estimates, countries are losing \$427 billion every year to tax havens. **India suffers an annual loss of \$10.3 billion from global tax abuse.**

In tune with changed pattern of economy:

- This agreement marks a much necessary reform of the global tax system to make it fit for the **current global digital age** where **cross-border digital services are gaining prominence.**

End the so called race to the bottom and its negative consequences:

- The introduction of a global minimum corporate tax will contribute to ending the decades-long “**race to the bottom on corporate tax rates**”, in which countries have resorted to ultra-low tax rates and tax exemptions to lure multinationals companies to invest.
- Such measures have **cost such countries hundreds of billions of dollars** whereas the corporate entities have only grown richer.

Form the basis of a global pact:

- This landmark agreement could form the basis of a worldwide deal.
- **The Organization for Economic Cooperation and Development** has been coordinating tax negotiations among 140 countries on **rules for taxing cross-border digital services and curbing tax base erosion, including a global corporate minimum tax.** The OECD and G20 countries aim to reach consensus on both by mid-year.

Move towards more equitable taxing rights:

- The agreement has committed to reaching an equitable solution on the allocation of taxing rights. It will focus on **protecting the interest of the market countries** by awarding such countries certain degree of taxing rights on the profits of the multinational enterprises.
- This will help ensure that MNCs would pay taxes where they operate and record their profits from based on the concept of ‘Significant Economic Presence’.

Challenges:

- Any final agreement could have major repercussions for low-tax countries and tax havens and is bound to be opposed by such countries.
- Though there seems to be broad agreement on the framework of a global minimum corporate tax, there continue to be **differences over the rate** of such a tax.
- The **inclusion of investment funds and real estate investment trusts** under such a system could also lead to some differences during the negotiations

7. Centre announces hike in MSP for paddy, pulses, oilseeds

Context:

The Central government has **hiked the minimum support price (MSP)** for common paddy for the coming Kharif season.

Details:

- The decision was taken by the **Cabinet Committee on Economic Affairs**.
- It is about 4% higher than last year's price.
- The Centre said the higher rate of returns being promised for urad, tur and oilseeds was a deliberate policy move.
 - The **differential remuneration** is aimed at encouraging **crop diversification**.
- Concerted efforts were made over the last few years to **realign the MSPs in favour of oilseeds, pulses and coarse cereals**.
 - This was to encourage farmers to shift to larger area under these crops and adopt the best technologies and farm practices, to correct the demand-supply imbalance.
- Added focus on **nutri-rich nutri-cereals** is to **incentivise its production in the areas where rice-wheat cannot be grown without long term adverse implications for groundwater table**.

What is minimum support price ?

- The MSP is the **rate at which the government purchases crops from farmers**, and is based on a calculation of at least **one-and-a-half times the cost of production incurred by the farmers**.
- It is a form of **government intervention to insure the farmers against a steep decline in the prices of their goods** and to help them prevent losses.
- The **Cabinet Committee of Economic Affairs announces MSP** for various crops at the beginning of each sowing season **based on the recommendations of the Commission for Agricultural Costs and Prices (CACP)**.
- The CACP takes into account **demand and supply, the cost of production and price trends in the market** among other things when fixing MSPs.

- The government reports the MSP towards the **beginning of both cropping seasons i.e. Rabi and Kharif.**
- Read more on the Minimum Support Price (MSP) in the link.

Issue:

- Farmers are upset with the three farm bills passed by the government, with one of the reasons being that none of them mentions anything about MSP.
- While the government does declare the MSP twice a year, there is **no law that makes MSP mandatory.**
- The protesters have been **asking for a statutory entitlement for all farmers** so that a **remunerative MSP can be ensured for all farmers.**
- The farmers **want the government to guarantee an MSP when they will be dealing with private players.**

8. Dihing Patkai is Assam's 7th National Park

What's in News?

Assam government has notified Dihing Patkai (Dehing Patkai) as a National Park.

Details:

- Recently, **Raimona National Park was created in western Assam's Kokrajhar district.**
- The five older National Parks in the State are **Kaziranga, Manas, Nameri, Orang and Dibru-Saikhowa.**
- **UNESCO World Heritage Sites** in the state: **Kaziranga and Manas National Parks.**
- **Tiger reserves: Nameri, Orang, Kaziranga and Manas National Parks.**

Dihing Patkai National Park:

- The national park straddles across eastern Assam's Dibrugarh and Tinsukia districts.
- **Dihing is the name of the river** that flows through this forest and **Patkai is the hill at the foot** of which the sanctuary lies.
- It is a **major elephant habitat** and 310 species of butterflies have been recorded there.
- The park has **47 species each of reptiles and mammals**, including the **tiger and clouded leopard.**

- The national park encompasses the erstwhile **Dehing Patkai Wildlife Sanctuary, the Jeypore Reserve Forest and the western block of the Upper Dihing Reserve Forest.**
- Short stretches of the **Dirak and Buri Dihing rivers have been included in the park.**

National Parks:

- Ministry of Environment & Forests defines a national park as “an area, whether within a sanctuary or not, that can be notified by the state government to be constituted as a National Park, by reason of its ecological, faunal, floral, geomorphological, or zoological association or importance, needed to for the purpose of protecting & propagating or developing wildlife therein or its environment.”
- National parks in India are **IUCN category II protected areas.**

THE INDIAN EXPRESS

GS 2 : Polity, Governance, International Relations

1. QS World University Rankings 2022

The Prime Minister has congratulated IIT Bombay, IIT Delhi and IISc Bengaluru for top-200 positions in QS World University Rankings 2022.

QS World University Rankings

- QS World University Rankings is an annual publication of university rankings by Quacquarelli Symonds (QS).
- It comprises the global overall and subject rankings (which name the world's top universities for the study of 51 different subjects and five composite faculty areas).
- It announces ranking for five independent regional tables (Asia, Latin America, Emerging Europe and Central Asia, the Arab Region, and BRICS).

Highlights of the 2022 Report

- IIT Bombay ranks joint-177 in the world, having fallen five places over the past year.
- IIT Delhi has become India's second-best university, having risen from 193 ranks in last year's ranking to 185 in the latest ranking. It has overtaken IISc Bangalore, which ranks joint-186.
- The Indian Institute of Science (IISc), Bengaluru, has been ranked the "world's top research university."
- The top three institutions globally are – Massachusetts Institute of Technology (MIT), University of Oxford, and Stanford University ranked at number one, two, and three respectively.

2. Holding states to account

Need for focus on the States

- In discussions on **reforms or debates about public expenditure**, there is an excessive focus on the Union government.
- This focus reflects our mindset that there is a "Centre", though **constitutionally, there is no "Centre"**. There is the Union government.

- There is not as much interest in State Finance Commissions and their recommendations as it is in the Union Finance Commission's recommendations.
- Alternatively, there is **limited scrutiny of state-level expenditure**, or fiscal devolution and **decentralisation** of decision-making within states, or tracking functioning of state legislatures.
- Most factor markets we seek to reform are on the concurrent list or the state list.

The Annual Review of State Laws 2020: Key findings

- PRS Legislative Research published this report and it focuses on the legislative work performed by states in the calendar year 2020.
- The annual review has been done in the pandemic year as 2020 saw the first wave of the pandemic.
- It covers 19 state legislatures, including the Union territory of Delhi, which together accounts for 90 per cent of the population of the country.

1) Low Productivity

- As a benchmark, the Parliament met for 33 days in 2020.
- Pre-2020, these 19 states met for an average of 29 days a year.
- In 2020, they met for an average of 18 days.
- When they met in 2020, States passed an average of 22 Bills (excluding Appropriation Bills).
- Karnataka passed 61 Bills, the highest in the country.
- The lowest was Delhi which passed one Bill, followed by West Bengal and Kerala, which passed two and three Bills respectively.

2) States pass Bills without scrutiny

- The report states that the State legislatures pass most Bills **without detailed scrutiny**.
- In 2020, 59 per cent of the Bills were passed on the same day that they were introduced in the legislature.
- A further 14 per cent were passed within a day of being introduced.
- In Parliament, Bills are often referred to Parliamentary Standing Committees for detailed examination.
- In most states, **such committees are non-existent**.

3) Information not shared by the legislature

- Information and data on state legislatures is not easily available.

- While some state legislatures publish data on a regular basis, many do not have a systematic way of reporting legislative proceedings and business.”
- Typically, information becomes available when countervailing pressure is generated.
- Reports like this help to do that.

Conclusion

Scrutinising States on various areas of their functioning is important to hold them accountable. The availability of data from state legislatures is an opportunity to monitor them better.

3.Hindu Kush Himalayan Mountains

Why in News

According to UNDP (United Nations Development Programme), the Hindu Kush Himalayan (HKH) mountain ranges could lose up to two-third of its ice by 2100.

- About 2 billion people may face food, water shortages by 2100.

Key Points

- **About HKH Region:**
 - It is often referred to as the ‘**Third Pole**’, on earth, is spread over **3,500 square kms** across **eight countries** including India, Nepal and China.
 - It contains the world’s **third-largest storage** of frozen water after Antarctica and the Arctic.
 - Over **240 million people live in the region’s mountains. 1.7 billion live in the river basins downstream**, while food grown in these basins reaches three billion people.
 - The glaciers **feed at least 10 major river systems**, which have bearings on agricultural activities, drinking water and hydroelectricity production in the region.
- **Challenges:**
 - According to **ICIMOD’s (International Centre for Integrated Mountain Development) 2019 assessment**, the HKH region will **continue to warm through the 21st century** even if the world is able to limit global warming at the agreed 1.5 degrees Celsius.
 - The **Paris agreement** aims to substantially reduce global greenhouse gas emissions in an effort to limit the global temperature increase in this century to 2 degrees Celsius above

pre industrial levels, while pursuing the means to limit the increase to 1.5 degrees.

- In the future, even if global warming is kept to 1.5 degrees C above the pre-industrialisation levels, **warming in the HKH region is likely to be at least 0.3 degrees C higher, and in the northwest Himalaya and Karakoram at least 0.7 degrees C higher.**
- **Threat:**
 - High Mountain Asia (the Asian mountain ranges surrounding the Tibetan Plateau) **will lose a substantial part of its cryosphere** in the next decades and thus a substantial part of its water storage abilities. This will lead to **increased water stress** in high mountain areas.
 - A **cryosphere** comprises portions of Earth's surface where **water is in solid form**, including sea ice, lake ice, river ice, snow cover, glaciers, ice caps, ice sheets, etc.
- **Causes for the Melting of Glaciers:**
 - The melting is driven by larger **anthropogenic modifications** (i.e. influenced by humans) of the atmosphere.
 - The HKH region lies **downwind** from some of the most **heavily polluted places** on Earth. This threatens agriculture, climate as well as monsoon patterns.
- **Recommendations:**
 - It is recommended to **shift away from** fossil fuel use in energy, transport, and other sectors, while changing diets and agricultural practices to move to net-zero emissions of greenhouse gases.
 - The countries in the region **need to reduce emissions of black carbon** and other air pollutants as well.
- **Suggested Policies and Actions to Mitigate the Problem:**
 - Farmers will need support to **design and invest in locally-appropriate water storage solutions**, or to shift to agricultural practices that consume less water.
 - **Designs of new hydropower plants and grids** will need to take into account the changing climate and water availability.
 - **Data and information, capacity-building and early warning systems and infrastructure design** will need to be improved. This calls for sufficient funding and large-scale coordination.
- **Related Initiative Taken by India:**
 - **National Mission on Sustaining Himalayan Ecosystem (NMSHE)** is one of the eight missions under the **National Action Plan on Climate Change (NAPCC)**.
 - The mandate is to evolve measures to sustain and safeguard the Himalayan glaciers, mountain ecosystems, biodiversity and wildlife conservation & protection.

The International Centre for Integrated Mountain Development

- ICIMOD is an **intergovernmental knowledge and learning centre** working for the people of the Hindu Kush Himalaya (HKH).
- It is **based in Kathmandu, Nepal** and works in and for **eight regional member countries** – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.

GS 3 : Economy, Science and Technology, Environment

4.Places in news: Sardar Sarovar Dam

The Sardar Sarovar Dam is providing irrigation water in summer for the first time in history.

Sardar Sarovar Dam

- The Sardar Sarovar Narmada Dam is a terminal dam built on the Narmada river at Kevadia in Gujarat's Narmada district.
- Four Indian states, Gujarat, Madhya Pradesh, Maharashtra and Rajasthan, receive water and electricity supply from the dam.
- The foundation stone of the project was laid out by Prime Minister Jawaharlal Nehru on 5 April 1961.
- The project took form in 1979 as part of a development scheme funded by the World Bank through their International Bank for Reconstruction and Development, to increase irrigation and produce hydroelectricity
- Called the 'lifeline of Gujarat', it usually has no water for irrigation during summers.

A successful model of river water sharing

- River Narmada is a classic case of Integrated River Basin Planning, Development, and Management, with water storage available in all major, medium, and minor dams on the main river and its tributaries.
- Its water is shared amongst four party states – Gujarat, Rajasthan, Madhya Pradesh and Maharashtra – in the ratio stipulated by the 1979 award of the Narmada Water Dispute Tribunal.

How has it saved water for summers?

- During the monsoon from July to October, the reservoir operation is well synchronized with the rain forecast in the catchment area.

- The strategic operation of River Bed Power House (RPBH) ensures that minimum water flows downstream into the sea and maximum water is used during the dam overflow period, which is not calculated in the annual water share.
- These measures help in maximizing the annual allocation of water share.
- Similarly, in non-monsoon months, the measures for efficient use of the allocated share typically include minimizing the conventional and operational losses.
- It includes: avoiding water wastage, restricting water-intensive perennial crops, adopting of Underground Pipelines (UGPL); proper maintenance and operation of canals on a rotational basis.

5. India's ethanol roadmap: The targets and challenges

The government of India has advanced the target for 20 per cent ethanol blending in petrol (also called E20) to 2025 from 2030. E20 will be rolled out from April 2023.

What is the move?

- A government-appointed panel has recommended to the Centre to keep the price of ethanol-blended petrol lower than normal petrol in view of lower calorific value as also to incentivize people to go for the clean fuel.
- This measure is aimed at reducing the country's oil import bill and carbon dioxide pollution. This new initiative is also part of measures to improve energy security and self-sufficiency measures.

Roadmap for Ethanol Blending

- The central government has released an expert committee report on the Roadmap for Ethanol Blending in India by 2025.
- The roadmap proposes a gradual rollout of ethanol-blended fuel to achieve E10 fuel supply by April 2022 and phased rollout of E20 from April 2023 to April 2025.
- Currently, 8.5 per cent of ethanol is blended with petrol in India.
- In order to introduce vehicles that are compatible the committee recommends roll out of E20 material-compliant and E10 engine-tuned vehicles from April 2023 and production of E20-tuned engine vehicles from April 2025.

What is included in the roadmap?

(1) Energy security

- The Union government has emphasized that increased use of ethanol can help reduce the oil import bill.

- India's net import cost stands at \$551 billion in 2020-21. It is estimated that the E20 program can save the country \$4 billion (Rs 30,000 crore) per annum.
- Last year, oil companies procured ethanol worth about Rs 21,000 crore.
- Hence it is benefitting the sugarcane farmers.
- Further, the government plans to encourage the use of water-sparing crops, such as maize, to produce ethanol, and the production of ethanol from the non-food feedstock.

(2) Fuel efficiency

- There is an estimated loss of six-seven per cent fuel efficiency for four-wheelers and three-four per cent for two-wheelers when using E20, the committee report noted.
- These vehicles are originally designed for E0 and calibrated for E10.
- The Society of Indian Automobile Manufacturers informed the expert committee that with modifications in engines (hardware and tuning), the loss in efficiency due to blended fuel can be reduced.

(3) Recalibrating engines

- The use of E20 will require new engine specifications and changes to the fuel lines, as well as some plastic and rubber parts due to the fuel's corrosive nature.
- The engines, moreover, will need to be recalibrated to achieve the required power-, efficiency- and emission-level balance due to the lower energy density of the fuel.
- This can be taken care of by producing compatible vehicles.

(4) Vehicles rollout

- E20 material compliant and E10 compliant vehicles may be rolled out across the country from April 2023, the committee noted.
- These vehicles can tolerate 10 to 20 per cent of ethanol-blended petrol and also deliver optimal performance with E10 fuel.
- Vehicles with E20-tuned engines can be rolled out all across the country from April 2025.
- These vehicles would run on E20 only and will provide high performance.

(5) Flex-fuel

- A flexible-fuel vehicle (FFV) is an alternative fuel vehicle with an internal combustion engine designed to run on more than one fuel and both fuels are stored in the same common tank.

- The Union ministry of road transport and highways issued a gazette notification March 2021 mandating stickers on vehicles mentioning their E20, E85 or E100 compatibility.
- This will pave the way for flex fuel vehicles.

Why such a move?

(1) Fuel efficiency

- Considering just the end use also indicates that CO₂ emissions from blended fuel are lower than that for petrol since ethanol contains less carbon than petrol and produces less CO₂.
- The blended fuel burns more efficiently with a more homogenous mixture, which leads to a decrease in CO₂ emissions compared with pure petrol.
- The carbon dioxide released by a vehicle when ethanol is burned is offset by the carbon dioxide captured when the feedstock crops are grown to produce ethanol.
- Comparatively, no emissions are offset when these petroleum products are burned.

(2) Emission reduction

- Use of ethanol-blended petrol decreases emissions such as carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NO_x), the expert committee noted.
- Higher reductions in CO emissions were observed with E20 fuel – 50 per cent lower in two-wheelers and 30 per cent lower in four-wheelers.
- HC emissions reduced by 20 per cent with ethanol blends compared to normal petrol.
- Nitrous oxide emissions, however, did not show a significant trend as it depended on the vehicle / engine type and engine operating conditions.
- The unregulated carbonyl emissions, such as acetaldehyde emission were, however, higher with E10 and E20 compared to normal petrol.
- However, these emissions were relatively lower. Evaporative emission test results with E20 fuel were similar to E0.

Global shreds of evidence

- An increase in the ethanol content in fuels reduced the emissions of some regulated pollutants such as CO, HC and CO₂.
- However, no such change in emissions was observed for nitrogen oxides emissions.
- The addition of ethanol, with a high blending octane number, however, allowed a reduction in aromatics in petrol.

- Such blends also burn cleaner as they have higher octane levels than pure petrol but have higher evaporative emissions from fuel tanks and dispensing equipment.

Challenges ahead

- Petrol requires extra processing to reduce evaporative emissions before blending with ethanol.
- It is crucial to study the emissions from flexible fuel vehicles not only for the regulated gases but also the unregulated ones.
- But producing and burning ethanol results in CO₂ emissions.
- Hence, net CO₂ emission benefit depends on how ethanol is made and whether or not indirect impacts on land use are included in the calculations.
- In summary, as we progress towards higher blending of ethanol, careful monitoring and assessment of emissions changes will be needed to make sure that emission reduction potential can be enhanced.

6. Legalizing Bitcoin in El Salvador and takeaways for India

El Salvador, a small coastal country in Central America, on became the first in the world to make Bitcoin, a digital currency, legal.

Lessons for India

While there are many precedents El Salvador sets for a global debate on cryptocurrency, we explore what this means in the Indian context.

(1) Not a precedent for monetary policy

- The development in El Salvador changes little in terms of Indian monetary calculations around cryptocurrencies.
- The dynamic underpinning the whole move is that El Salvador has no monetary policy of its own and hence, no local currency to protect.
- The country was officially 'dollarized' in 2001 and runs on the monetary policy of the US Federal Reserve.
- The move is in part motivated by loose and expansionary Federal Reserve policy.

(2) Coexistence with USD

- The dollar will continue to remain the dominant currency in the country and Bitcoin would exist side by side.

- Indeed, some analysts have pointed out how bitcoinization might change nothing on the ground if “legal tender” is to be considered by its strict legal definition.
- However, as a result of this development, El Salvador becomes a most interesting case study of how the dollar and bitcoin would coexist side by side, and how that would play out for Bitcoin adoption.

(3) Not merely currency but technology

- The overall use of Bitcoin appears less motivated by its use as a currency and much more by the image and investment boost this could give the country towards innovation.
- El Salvador believes that this move will be good for luring “technology, talent, and new ideas” into the country.
- The move into Bitcoin ties in with larger efforts to revive a stalling economy and bring back growth into the country post-Covid.

(4) Potential shift in remittances

- The impact Bitcoin has on these remittance inflows would be worth monitoring for India, which is home to the largest remittance market in the world.
- Remittances make up close to 20% of El Salvador’s GDP with flows approximating \$6 billion annually.
- Many citizens lack a bank account and digital banking has low penetration.
- In this scenario, there are multiple intermediaries in the remittance chain who take cuts of as high as 20%.

(5) Impact on money laundering

- The implication of this move for money laundering is unclear at the moment.
- Currently, El Salvador is not considered deficient under the FATF money laundering requirements.
- However, with large scale cryptocurrency inflows and outflows, it would be expected that El Salvador would comply with the 2019 FATF guidance on Virtual Currencies.

Conclusion

- The overall takeaway for India from the El Salvador case is not in the monetary sense at all.
- This is the wealth that India has in spades and has barely protected with policy.

- While deliberations continue in India on the monetary and financial regulations around cryptocurrency.
- It is important that attention be paid to incentives for India's developers working on key innovations in the space.

7. Fast Tracking Freight in India: NITI Aayog

Why in News

NITI Aayog, Rocky Mountain Institute (RMI) and RMI India's new report, Fast Tracking Freight in India: A Roadmap for Clean and Cost-Effective Goods Transport, present key opportunities for India to reduce its logistics costs.

- **RMI is an independent nonprofit organization** founded in 1982.

NITI Aayog

- It is a **public policy think tank of the Government of India**, established with the aim to **achieve sustainable development goals with cooperative federalism** by fostering the involvement of State Governments of India in the economic policy-making process using a bottom-up approach.
- It was established **to replace the Planning Commission**. The **Prime Minister** is its **ex-officio chairman**.

Key Points

- **Growing Freight Transport Demand:**
 - Due to the rising demand for goods and services, **freight transport demand is expected to grow rapidly in the future**.
 - While freight transport is essential to economic development, it is **plagued by high logistics costs and contributes to rising carbon dioxide emissions and air pollution in cities**.
- **India's Potential:** It has the potential to:
 - Reduce its logistics cost by 4% of **Gross Domestic Product (GDP)**.
 - Achieve **10 gigatonnes of cumulative carbon dioxide emissions savings** between 2020 and 2050.
 - Reduce Nitrogen Oxide (NO_x) and **Particulate Matter (PM)** emissions by 35% and 28%, respectively, until 2050.
- **Accommodating More Urban Citizens:**
 - As India's freight activity grows five-fold **by 2050 and about 400 million citizens move to cities**, a whole system transformation can help uplift the freight sector.
 - This transformation will be defined by **tapping into opportunities** such as:

- Efficient rail-based transport.
- Optimisation of logistics and supply chains.
- Shift to electric and other clean-fuel vehicles.
- These solutions **can help India save Rs. 311 lakh crore** cumulatively over the next three decades.
- **Need to Make Freight Transportation Cost Effective:**
 - Freight transportation is a **critical backbone of India's growing economy**, and now more than ever, **it's important to make this transport system more cost-effective, efficient, and cleaner.**
 - Efficient freight transport will also **play an essential role in realising the benefits of existing government initiatives** such as **Make in India, Atma Nirbhar Bharat, and Digital India.**
- **Recommendations:**
 - Increasing the rail network's capacity, promoting intermodal transport, improving warehousing and trucking practices, policy measures and pilot projects for clean technology adoption, and stricter fuel economy standards.
 - When successfully deployed at scale, **the proposed solutions can help India establish itself as a leader** in logistics innovation and efficiency in the **Asia-Pacific region and beyond.**
- **Recent Initiatives:**
 - **Dedicated Freight Corridor (DFC):**
 - It is a **high speed and high capacity railway corridor** that is exclusively meant for the transportation of freight, or in other words, goods and commodities.
 - **E-Way Bill Integration with FASTag, RFID:**
 - It will **enable tax officers to undertake live vigilance** in respect of **E-Way Bill** compliances by businesses, stop revenue leakage and will facilitate movement of large goods vehicles.
 - **FAME Scheme:**
 - The Indian government has created momentum through its Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles schemes that encourage, and in some segments mandates the **adoption of electric vehicles (EV), with a goal of reaching 30% EV penetration by 2030.**
 - **Bharat Stage VI norms:**
 - It includes a **wide list of technology modifications**, the most significant being making OBD (On-board diagnostics) mandatory for all vehicles.
 - **Corporate Average Fuel Efficiency (CAFE) Regulations:**
 - The CAFE standards were first **notified in 2017** by the Union Ministry of Power (MoP) **under Energy Conservation Act, 2001.**

- The regulation is in accordance with the fuel consumption standards of 2015 that aim to **increase fuel efficiency of vehicles on the road by 35% by 2030.**



Prelims Practice Questions

1. Operation Pangea XIV, recently seen in the news, is a:

- global crackdown on illegal medical trade
- research study to evaluate continental drift theory
- oil and gas exploration initiative in the Arctic area
- none of the above

Answer: a

Explanation:

The operation codenamed “Operation Pangea XIV” was an exercise coordinated by Interpol for a global crackdown on illegal medical trade.

2. Consider the following statements regarding the YUVA scheme:

- It is aimed at training aspiring writers to express India’s culture and literature globally.
- The Ministry of Education is the implementing agency of the scheme.

Which of the statements given above is/are correct?

- A 1 only
B 2 only
C Both 1 and 2
D Neither 1 nor 2

Answer : C

Explanation

- Recently, the Prime Minister of India has announced the ‘**Young, Upcoming and Versatile Authors’ (YUVA) scheme** - a mentorship programme to **train young authors**.
 - The scheme is aimed at training 75 aspiring writers below 30 years, who are ready to **express project India and its culture and literature globally. Hence, statement 1 is correct.**
 - A consolidated scholarship of Rs. 50,000 per month for a period of six months per author will be paid under the mentorship scheme.

- The National Book Trust (under the Ministry of Education) will ensure phase-wise execution of the Scheme. **Hence, statement 2 is correct.**

3. Consider the following statements: Attorney General of India can

1. take part in the proceedings of the Lok Sabha
2. be a member of a committee of the Lok Sabha
3. speak in the Lok Sabha
4. vote in the Lok Sabha

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 and 4 only
- c. 1, 2 and 3
- d. 1 and 3 only

Answer: c

Explanation:

- The Attorney General of India can take part in the proceedings of the Lok Sabha.
- He/she can be a member of a committee of the Lok Sabha.
- He/she can speak in the Lok Sabha.
- The Attorney General of India has the right to speak and to take part in the proceedings of both the Houses of Parliament or their joint sitting and any committee of the Parliament of which s/he may be named a member but without a right to vote.

4) The Global Liveability Index, 2021, was recently launched by?

- a. World Bank
- b. UN Habitat
- c. Economist Intelligence Unit
- d. Institute of Economics & Peace

Answer : c

Explanation:

- Economist Intelligence Unit (EIU) has recently launched the Global Liveability Index, 2021.

Global Liveability Index, 2021

- COVID-19 has shaken up the annual ranking of most liveable cities, propelling New Zealand's Auckland to first place, replacing Vienna, which crashed out of the top 10 as the island nations of New Zealand, Australia and Japan fared best.
- The Austrian capital, Vienna, had led the list since 2018 and for years ran neck and neck with Melbourne at the top of the survey of 140 urban centres.
- New Zealand's elimination of COVID-19 within its borders through lockdown measures helped by its geographic isolation, however, gave its cities a big boost.
- The latest ranking is from 2019 as last year's was cancelled.

5. Consider the following statements with respect to Chemical Weapons Convention

1. It is implemented by the Organization for the Prohibition of Chemical Weapons (OPCW).
2. Three countries that have neither signed nor ratified the convention are India, Pakistan and China.

Which of the statement(s) given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

Explanation:

Chemical Weapons Convention

- It is a multilateral treaty that bans chemical weapons and requires their destruction within a specified period of time.
- It is of unlimited duration and is far more comprehensive than the 1925 Geneva Protocol, which outlaws the use but not the possession of chemical weapons.

- Three countries have neither signed nor ratified the convention (Egypt, North Korea and South Sudan).
- India signed the treaty at Paris on 14th day of January 1993.

6. Trirashmi Buddhist Cave complex is located in which of the following states?

- a. Karnataka
- b. Uttar Pradesh
- c. Maharashtra
- d. Madhya Pradesh

Answer : c

Explanation:

Trirashmi Buddhist Cave Complex

- The Nasik Caves, or Trirashmi Leni are a group of 23 caves carved between the 1st century BCE and the 3rd century CE.
- Buddhist sculptures are a significant group of early examples of Indian rock-cut architecture initially representing the Hinayana tradition.
- Most of the caves are viharas except for Cave 18 which is a chaitya of the 1st century BCE.

Mains Practice Questions

1Q. ISRO's role has been impeccable in making India a global space power, however, there are many challenges and opportunities in the new space age that ISRO needs to address. Discuss. (250 words)

Approach

- Briefly mention about ISRO's role in making India a global space power.
- Explain 'new space age' and mention the challenges and opportunities for ISRO.
- Conclude by mentioning the need for regulation in space sector.

2Q. Highlight the socio-political conditions of the Sangam period with special mention of three literary assemblies. (250 words)

Approach

- Mention about the time period of Sangam age and the literary assemblies held during that period.
- Explain the socio-political conditions including Sangam polity, administration, society, the position of women, religion, etc.
- Conclude by mentioning about the decline of Sangam period.