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GS 2 : Polity, Governance, International Relations

1. Jallianwala Bagh Memorial

Prime Minister has virtually inaugurated the renovated Jallianwala Bagh complex in Amritsar.

Rowlatt Act

- The act officially known as the Anarchical and Revolutionary Crimes Act, 1919 was passed in 1919 by the Imperial Legislative Council.
- It had authorized the British government to arrest anybody suspected of terrorist activities.
- It also authorized the government to detain such people arrested for up to 2 years without trial.
- It empowered the police to search a place without a warrant. It also placed severe restrictions on the freedom of the press.
- The primary intention colonial govt. was to repress the growing nationalist movement in the country.
- The British were also afraid of a Ghadarite revolution in Punjab and the rest of the country.

The massacre day

- The massacre took place on 13 April 1919 when troops of the British Indian Army under the command of Col. Reginald Dyer fired rifles into a crowd of Indians.
- The civilians had assembled for a peaceful protest to condemn the arrest and deportation of two national leaders, Satya Pal and Saifuddin Kitchlew.
- Dyer without warning ordered his troops to fire at the unarmed crowd which included children as well.
- The indiscriminate firing went on for about 10 minutes which resulted in the deaths of at least 1000 people and injured more than 1500 people.

Aftermath

- In protest against the massacre Rabindranath Tagore gave up his knighthood.
- Gandhiji relinquished his title 'Kaiser-e-hind' bestowed on him by the British for his services during the Boer War in South Africa.

- Michael O'Dwyer, the then Lieutenant-Governor of Punjab, who had approved the actions of Dyer, was assassinated by Udham Singh in London in 1940 as revenge against the massacre.
- The heroic treatment to Dyer's heinous act again set a benchmark of colonial arrogance.

Hunter Commission for enquiry

- In October 1919 the Secretary of State for India, Edwin Montagu, ordered the formation of a committee of inquiry into the events in Punjab.
- Referred to as the Disorders Inquiry Committee, it was later more widely known as the Hunter Commission (Not to be confused with Hunter Education Commission).
- Still there are long-standing demands in India that Britain should apologize for the massacre.

2. Pradhan Mantri Jan-Dhan Yojana (PMJDY)

Context : The Scheme completes seven years of successful implementation

About

- Pradhan Mantri Jan-Dhan Yojana (PMJDY) is National Mission for Financial Inclusion to ensure access to financial services, namely, Banking/ Savings & Deposit Accounts, Remittance, Credit, Insurance, Pension in an affordable manner.
- **Objectives:**
  - o Ensure access of financial products & services at an affordable cost
  - o Use of technology to lower cost & widen reach
- **Basic tenets of the scheme**
  - o **Banking the unbanked –** Opening of basic savings bank deposit (BSBD) account with minimal paperwork, relaxed KYC, e-KYC, account opening in camp mode, zero balance & zero charges
  - o **Securing the unsecured –** Issuance of Indigenous Debit cards for cash withdrawals & payments at merchant locations, with free accident insurance coverage of Rs. 2 lakh
  - o **Funding the unfunded –** Other financial products like micro-insurance, overdraft for consumption, micro-pension & micro-credit

- **The scheme was launched based upon the following 6 pillars:**

  - o

- o Universal access to banking services – Branch and BC
- o **Basic savings bank accounts** with overdraft facility of Rs. 10,000/- to every eligible adult
- o **Financial Literacy Program**– Promoting savings, use of ATMs, getting ready for credit, availing insurance and pensions, using basic mobile phones for banking
- o **Creation of Credit Guarantee Fund** – To provide banks some guarantee against defaults
- o **Insurance** – Accident cover up to Rs. 1,00,000 and life cover of Rs. 30,000 on account opened between 15 Aug 2014 to 31 January 2015
- o **Pension scheme** for Unorganized sector

- **Important approach adopted in PMJDY based on past experience:**
  - o Accounts opened are online accounts in core banking system of banks, in place of earlier method of offline accounts opening with technology lock-in with the vendor
  - o Inter-operability through RuPay debit card or Aadhaar enabled Payment System (AePS)
  - o Fixed-point Business Correspondents
  - o Simplified KYC / e-KYC in place of cumbersome KYC formalities

- **Extension of PMJDY with New features –** The Government decided to extend the comprehensive PMJDY program beyond 28.8.2018 with some modifications
  - o **Focus shift from 'Every Household' to Every Unbanked Adult'**
  - o **RuPay Card Insurance –** Free accidental insurance cover on RuPay cards increased from Rs. 1 lakh to Rs. 2 lakh for PMJDY accounts opened after 28.8.2018.
  - o **Enhancement in overdraft facilities –** OD limit doubled from Rs 5,000/- to Rs 10,000/-; OD upto Rs 2,000/- (without conditions).
  - o Increase in upper age limit for OD from 60 to 65 years

- **Impact of PMJDY**
  - o More than 43.04 crore beneficiaries banked under PMJDY since inception, amounting to Rs. 146,231 crore
  - o PMJDY Accounts have grown three-fold from 14.72 Crore in Mar'15 to 43.04 Crore as on 18-08-2021
  - o 55% Jan-Dhan account holders are women and 67% Jan Dhan accounts are in rural and semi-urban areas
  - o Out of total 43.04 crore PMJDY accounts, 36.86 crore (86%) are operative
  - o Total RuPay cards issued to PMJDY accountholders: 31.23 Crore

o Under PM Garib Kalyan Yojana, a total of Rs. 30,945 crore have been credited in accounts of women PMJDY account holders during Covid lockdown

o About 5.1 crore PMJDY accountholders receive direct benefit transfer (DBT) from the Government under various schemes.

GS 3 : Economy, Science and Technology,Environment

3. Why is there a push for Asset Monetization?

Finance Minister has recently announced the framework for the National Monetization Pipeline (NMP) and its process is under discussion.

Asset Monetization

- Asset Monetization involves the creation of new sources of revenue by unlocking of the value of hitherto unutilized or underutilized public assets.
- Internationally, it is recognized that public assets are a significant resource for all economies.
- Many public sector assets are sub-optimally utilized and could be appropriately monetized to create greater financial leverage and value for the companies and of the equity that the government has invested in them.
- This helps in the accurate estimation of public assets which would help in the better financial management of government/public resources over time.

National Monetization Pipeline?

- The NMP names a list of public assets that will be leased to private investors.
- Only brown-field assets, which are assets that are already operational, are planned to be leased out under the NMP.
- So, to give an example, an airport that is already operational may be leased out to an investor.
- Assets that are yet to be developed, such as an undeveloped piece of land, for example, may not be leased out.
- Importantly, there won't be any transfer of ownership from the government to the private sector when assets are leased out.
- The government only plans to cede control over its assets for a certain period of time, after which the assets must be returned to the government unless the lease is extended.

Will NMP help the economy?

- **Better control and utilization:** Economists generally believe that scarce assets are better managed and allocated by the private sector than by the government. So to the extent that the NMP frees assets from government control, it can help the economy.
- **Freeing Capital:** The government believes that leasing out public assets to private investors will help free capital that is stuck in these assets.
- **Infra generation:** The government can use this money, in turn, to build fresh infrastructure under the National Infrastructure Pipeline (NIP).
- **Economic boost:** In fact, the proceeds from the NMP are expected to account for about 14% of the total outlay for infrastructure under the NIP. The government believes all this spending will boost economic activity.
- **A perfect model:** Analysts also believe that the government has now through the NMP found the right model for infrastructure development.
- **Source of finance:** The government, they say, is best suited to tackle the ground-level challenges in building infrastructure, while the private sector can operate and offer indirect finance to these projects through the NMP.

What are the risks?

- **Political lobbying:** The allocation of assets owned by governments to private investors is often subject to political influence, which can lead to corruption. In fact, many in the Opposition allege that the NMP will favour a few business corporations that are close to the government.
- **Burden of opportunity cost:** The expected boost to economic activity due to higher government spending may also need to be weighed against the opportunity costs. For one, the money that the government collects by leasing out assets comes from the pockets of the private sector. So higher government spending will come at the cost of lower private spending.
- **Legal uncertainties:** The NMP also does not address the various structural problems such as legal uncertainty and the absence of a deep bond market that hold back private investment in infrastructure.
- **Sheer Privatization:** There are also concerns that the leasing of airports, railways, roads and other public utilities to private investors could lead to higher prices for consumers. If the government merely cedes control of public utilities to private companies without taking steps to foster greater competition, it can indeed lead to poor outcomes for consumers.
- **Policy compulsion:** The government's past disinvestment projects such as the sale of Air India did not catch the fancy of investors owing to the stringent conditions set by the government. In the case of Air India's sale, the buyers were supposed to possess a certain minimum net worth and stay invested in the airline for at least three years.

What lies ahead?

- The success of the NMP will depend on the demand for brown-field government assets among private investors.
- Many analysts also believed that the government was expecting buyers to pay too much for a debt-ridden Air India.
- The pricing of assets and the terms of sale will thus determine the level of interest that private investors show for assets leased under the NMP.
- In the past, doubts have been raised about the allocation of airports and other assets to certain private business groups (say Adani Group).
- So the process that the government adopts this time to allocate assets may come under scrutiny. There is likely to be a demand for an open, competitive auction of assets.

4. BCG vaccine: 100 years and counting

The first use of BCG (Bacillus Calmette-Guerin), the vaccine against tuberculosis (TB) in humans has been completed for 100 years.

Tuberculosis

- TB is a very ancient disease and has been documented to have existed in Egypt as early as 3000 BC.
- It is caused by a bacterium called Mycobacterium tuberculosis, belonging to the Mycobacteriaceae family consisting of about 200 members.
- Some of these cause diseases like TB and leprosy in humans and others infect a wide range of animals. Mycobacteria are also widely dispersed in the environment.
- In humans, TB most commonly affects the lungs (pulmonary TB), but it can also affect other organs (extra-pulmonary TB).

Yet not eliminated

- Other historically dreaded diseases like smallpox, leprosy, plague and cholera have been either eradicated or controlled to a large extent due to advances in science and technology.
- However, TB continues to be a major public health problem in the world.
- According to the WHO's Global TB Report, 10 million people developed TB in 2019 with 1.4 million deaths. India accounts for 27% of these cases.

BCG Vaccine for TB

- BCG was developed by two Frenchmen, Albert Calmette and Camille Guerin, by modifying a strain of Mycobacterium bovis (that causes TB in cattle) till it lost its capacity to cause disease while retaining its property to stimulate the immune system.
- It was first used in humans in 1921.
- Currently, BCG is the only licensed vaccine available for the prevention of TB.
- It is the world's most widely used vaccine with about 120 million doses every year and has an excellent safety record.

BCG in India

- In India, BCG was first introduced in a limited scale in 1948 and became a part of the National TB Control Programme in 1962.
- India is committed to eliminate TB as a public health problem by 2025.

Effectiveness of BCG

- One intriguing fact about BCG is that it works well in some geographic locations and not so well in others.
- Generally, the farther a country is from the equator, the higher is the efficacy.
- In children, BCG provides strong protection against severe forms of TB.
- This protective effect appears to wane with age and is far more variable in adolescents and adults, ranging from 0–80%.
- In addition to its primary use as a vaccine against TB, BCG also protects against respiratory and bacterial infections of the newborns and other mycobacterial diseases like leprosy and Buruli's ulcer.
- It is also used as an immunotherapy agent in cancer of the urinary bladder and malignant melanoma.

5. Hurricane Ida makes landfall in US

Hurricane Ida has made landfall in Louisiana, US as an extremely dangerous Category 4 storm.

Hurricane

- A hurricane is a tropical cyclone that occurs in the Atlantic Ocean and the northeastern Pacific Ocean.
- And a typhoon occurs in the northwestern Pacific Ocean; in the south Pacific or the Indian Ocean, comparable storms are referred to simply as "tropical cyclones" or "severe cyclonic storms".

Tropical Cyclones

A Tropical cyclone is an intense circular storm that originates over warm tropical oceans and is characterized by low atmospheric pressure, high winds, and heavy rain.

- Cyclones are formed over **slightly warm ocean waters**. The **temperature** of the top layer of the sea, up to a depth of about 60 meters, need to be at **least 28°C** to support the formation of a cyclone.
- This explains why the **April-May and October-December** periods are conducive for cyclones.
- Then, the low level of air above the waters needs to have an **'anticlockwise' rotation (in the northern hemisphere; clockwise in the southern hemisphere).**
- During these periods, there is an **ITCZ in the Bay of Bengal** whose southern boundary experiences winds from west to east, while the northern boundary has winds flowing east to west.
- Once formed, cyclones in this area usually move northwest. As it travels over the sea, the cyclone gathers more **moist air from the warm sea** which adds to its heft.

Destruction caused

- **Strong Winds:** Cyclones are known to cause severe damage to infrastructure through high-speed winds.
- **Torrential rains and inland flooding:** Torrential rainfall (more than 30 cm/hour) associated with cyclones is another major cause of damages. Unabated rain gives rise to unprecedented floods.
- **Storm Surge:** A Storm surge can be defined as an abnormal rise of sea level near the coast caused by a severe tropical cyclone.

Some (unexpected) benefits

Although Tropical cyclones are known for the destruction they cause, when they strike they also bestow certain benefits to the climatic conditions of that area such as

- Relieve drought conditions
- Carry heat and energy away from the tropics and transport it towards temperate latitudes
- Maintain a relatively stable and warm temperature worldwide

6. A fine line

- In the light of the Environment Ministry's affidavit in the Supreme Court, stating that it has permitted seven **hydroelectric power projects in the state of Uttarakhand** to go ahead, the article analyzes the **concerns** associated with hydroelectric power projects in the fragile ecosystems of the Himalayas and calls for a **fine balance between development needs and environmental sustainability.**

Details :

- In the aftermath of the devastating **Kedarnath floods of 2013**, the Supreme Court had halted the development of hydroelectric projects in Uttarakhand.
- It had called on the Environment Ministry to review the **role played by hydroelectricity projects in amplifying the natural disasters like cloud bursts and floods.**
- Several **expert committees** were set up to examine the role of 24 such proposed hydroelectric projects in the Alaknanda and Bhagirathi basin of the river Ganga and its tributaries. The first two committees had concluded that the **proposed projects could have a significant environmental impact and irreversibly impact the fragile ecology of the region**.
- Following this adverse observations by the expert committees, six private project developers impleaded themselves in the case in the SC. They sought their projects to be allowed to be continued given that they were already in various stages of construction following a clearance from the environment ministry.
- A new committee set up in 2015 recommended the projects to be allowed with design modifications to some.

Details:

- The Environment Ministry has given the go ahead to 7 hydropower projects that are reportedly in advanced stages of construction

Concerns:

Impact on the flow of Ganga river:

- The cleanliness of the Ganga River is premised on minimum levels of water flow in it in all seasons and the **proposed hydropower projects in the upstream of the Ganga basin could hinder water flow** in the Ganga River.

Environmental impact

- The **hydro power projects induce severe ecological damage** to the region.
  - The large scale **deforestation** exercises involved in construction leads to **land degradation and desertification** in the region.
  - Large scale projects with large storage basins lead to **submergence of large areas of land.**
  - The **use of rock blasting and heavy machinery** during the construction of power projects has damaged the fragile hills.
  - The lack of scientific disposal of **construction debris is leading to environmental pollution in the river basins.**

Exacerbate the vulnerability to natural disasters:

- **The fragile ecology of the region is prone to natural disasters like landslides and Glacial Lake Outbursts**. The presence of hydropower projects in such vulnerable regions only increase the threat to the life and infrastructure in the region.
  - The break in the **Raunthi glacier had triggered floods in the Rishiganga river in Uttarakhand** and washed away at least two hydroelectric power projects- Rishiganga hydroelectric power project and the Tapovan Vishnugadh project in February, 2021.
- Also the **seismically active Himalayan region is prone to earthquakes.** A massive earthquake which could **damage the dams can lead to flash floods** and lead to loss of life and property downstream of the dams.

Threat of climate change:

- **Global warming is expected to intensify the Glacier retreat and permafrost thaw.** Glacier retreat and permafrost thaw are projected to **decrease the stability of mountain slopes and increase the number and area of glacier lakes.** Glacier lakes pose the risk of outburst.
  - Environmental experts have attributed the glacial melt in Raunthi glacier which had triggered floods in the Rishiganga river to global warming.
- Also the recent sixth assessment report of the IPCC has warned of the possibility of **increased instances of cloudbursts**.
  - The increased chances of intense spells of rainfall would trigger landslides in the region threatening the hydropower projects. This places the residents of the region at increased risk of loss of lives and livelihood.

Counter-arguments:

- Hydropower is abundantly available in the Himalayan state of Uttarakhand and its usage becomes **critical to the development of the state.**

- Hydropower constitutes a renewable source of power and will be **critical to meet India's obligations under its Nationally Determined Contributions** under the Paris Climate Agreement.

Recommendations:

Need for a balance between development and environmental sustainability:

- While the hydro power projects in the region have brought prosperity, they have also increased the vulnerability of the fragile ecosystem of the region.
- **Infrastructural development in the region cannot come at a heavy environmental cost**, given that such growth and development will not be sustainable.
- A balance has to be struck between development and environmental sustainability.

Alternative strategies:

- **Small run-off hydro power projects** with a small environmental footprint should be promoted in the region.
- Other **alternatives like solar power** should also be explored.

Review of policy:

- The government must review its policy on hydro power projects.
- The fact that the state of Uttarakhand has its own **unique environmental challenges** needs to be accounted for adequately in such a policy. The **conservation, sustenance of these ecologically fragile regions must be given the highest priority.**
- The fact that the government has stated that it is not in favour of greenfield hydropower projects in the region is a welcome move in this regard.

THE INDIAN EXPRESS

GS 2 : Polity, Governance, International Relations

1. Militancy in Assam's Dima Hasao

In News: A suspected militant attack left five truckers dead in Assam's Dima Hasao hill district. Intelligence inputs suggest that an outfit called the Dimasa National Liberation Army (DNLA) was behind the attack.

History of militancy in Dima Hasao

- The hill districts of Assam — Karbi Anglong **and Dima Hasao (earlier North Cachar Hills) —** have had a long history of insurgency by Karbi and Dimasa groups which peaked in the mid-1990s, and was rooted in a **core demand of statehood.**
- Both districts are now protected under the **Sixth Schedule of the Constitution,** and allows for greater political autonomy and decentralised governance in certain tribal areas of the Northeast.
- They are run by the **North Cachar Hills Autonomous Council** and the **Karbi Anglong Autonomous Council** respectively.
- In Dima Hasao, the demand for statehood began in the 1960s, along with other tribal sections of undivided Assam. A demand for a full-fledged state, **'Dimaraji',** gathered steam, and led to the start of militancy through formation of armed groups.

Dimasas

- The Dimasas (or Dimasa-Kacharis) are the **earliest known rulers and settlers of Assam,** and now live in Dima Hasao, Karbi Anglong, Cachar, Hojai and Nagaon districts of central and southern Assam, as well as parts of Nagaland.
- Prior to Ahom rule, the Dimasa kings — believed to be the descendants of the rulers of the ancient **Kamarupa kingdom** — ruled large parts of Assam along the south bank of the Brahmaputra between the 13th and 16th centuries.
- Their earliest historically known capital was Dimapur (now in Nagaland), and later Maibang in North Cachar Hills.

2. POSHAN Maah

In News: Thematic POSHAN Maah will be Celebrated Across the Nation Throughout the Month of September as Part of Azadi Ka Amrit Mahotsav.

About POSHAN (Prime Minister's Overarching Scheme for Holistic Nutrition) Abhiyaan:

Launched by Ministry of Women & Child Development (MoW&CD) on the occasion of International Women's Day on 8 March, 2018 from Jhunjhunu in Rajasthan, POSHAN Abhiyaan is Government of India's flagship programmed to **improve nutritional outcomes for children, adolescent Girls, pregnant women and lactating mothers.**

- The Abhiyaan targets to reduce
    - Stunting by 2% per annum
    - Undernutrition by 2% per annum
    - Anemia (among young children, women and adolescent girls) by 3% per annum
    - Reduce low birth weight by 2% per annum
- It is an **inclusive Jan Andolan or "People's Movement"** that involves participation of public representatives of local bodies, government departments of the States/UTs, social organizations and the public and private sector at large.
- Focusing on the aims of POSHAN Abhiyaan, **Mission Poshan 2.0 (Saksham Anganwadi and Poshan 2.0)** has been announced in the Budget 2021-2022 as an integrated nutrition support programme, to strengthen nutritional content, delivery, outreach and outcomes with focus on developing practices that nurture health, wellness and immunity to disease and malnutrition.
- In order to ensure community mobilization and bolster people's participation, every year, the month of September is celebrated as POSHAN Maah across the country.
- This year, the entire month of September has been subdivided into weekly themes for focused and assimilated approach towards improving Holistic Nutrition.

3. What's new in Higher Education

In News: The new National Education Policy is in the news again with Delhi University (DU) approving the introduction of the four-year undergraduate programme from 2022, amid opposition from teachers.

The NEP proposes several reforms for higher education. A look at how, if implemented in letter and spirit, the NEP can change the classroom experience:

1. **Multidisciplinarity**

- Higher education in India is focused on producing disciplinary experts. But the new NEP proposes to break disciplinary boundaries.
- What this means is that B Tech students, for example, would no longer limit themselves to their engineering branch. Instead, their programmes will have a more significant component of arts and humanities.
- "Students of arts and humanities will aim to learn more science, and all will make an effort to incorporate more vocational subjects and soft skills," the policy states.
- IIT-Bombay's new Liberal Arts, Sciences, and Engineering (LASE) Programme is one example of how the NEP's vision translates on ground
  - It gives students the option to graduate with a Bachelor of Science (BS) degree in five fields or "concentrations" — engineering sciences, natural sciences, social sciences, art and design.
  - The fifth option permits the student to design her own concentration.

2. **Four-year undergrad programme**

- Undergraduate programmes in India, except professional degrees such as B Tech and MBBS, **usually last three years.**
- While the NEP doesn't call for scrapping of the three-year format, it states that the **four-year multidisciplinary Bachelor's programme "shall be the preferred option".**
- The new policy proposes to increase the length of degree programmes to allow students to experience the full range of holistic and multidisciplinary education.
- While students pursuing undergraduate education will be studying an extra year, they will also have the option to exit early with the "appropriate certification". Quitting after the
  - First year will earn – a certificate
  - Second year -a diploma
  - Third Year – a Bachelor's degree.
  - Completing the entire programme would lead to a bachelor's degree "with Research" if the student completes "a rigorous research project" in her major area(s) of study.
- Delhi University is the first to implement this NEP suggestion. Starting 2022, DU students can opt for either a three-year honours programme, or a four-year honours programme, or a four-year honours programme with research. They can also exit with appropriate certification.

3. **Academic Bank of Credit**

- The University Grants Commission (UGC) had introduced a choice-based credit system (CBCS) before the NEP. Under this system, you earn credits for each course you take during your degree studies.
- The Academic Bank of Credit (ABC) proposed by the NEP is where higher education institutions will **digitally deposit credits earned by students** for courses they studied.
- Under the ABC, students will be given multiple entry and exit options.
- This enables students to leave a degree or course and get a corresponding certification and rejoin studies after a certain time and be able to start from where they had left.
- It will also provide students with the **flexibility to move between institutes** while pursuing one degree or leave a course.
- Designating credits to each course would also mean that courses or projects in areas such as community service, environmental education, sciences, art, sports and value-based education would carry weight. This would go a long way in "attainment of a holistic and multidisciplinary education".

4. **Regional languages**

- The new education policy lays emphasis on promoting Indian languages, arts and culture through education. One of the ways it proposes to do so is by getting higher education institutions to adopt regional languages or the local tongue as the medium of instruction in the classroom.
- To begin with, the government has allowed 14 engineering colleges to teach selected engineering programmes in five languages: Marathi, Tamil, Bengali, Telugu and Hindi.
- This will help increase the Gross Enrolment Ratio in higher education as students who are not proficient in English will be encouraged to pursue further studies in regional languages.

5. **National Entrance Test**

- Another proposal is a single university entrance exam conducted by the **National Testing Agency**. If this is implemented, students will not have to appear for multiple entrance tests.
- Rather than having hundreds of universities each devising their own entrance exams, Universities can make use of this common entrance exam which drastically reduces the burden on students and the entire education system.

4. Towards a more humane police force

In News:

- Recently, the **Chief Justice of India had expressed concern at the degree of human rights violations in police stations** in the country despite the existing constitutional guarantees.
- The CJI had noted that the threat to human rights and bodily integrity was the highest in police stations.

About:

Custodial deaths:

- As per the **National Crime Records Bureau (NCRB) data**, though the number of custodial deaths varies year to year, **on average, about 100 custodial deaths have taken place every year between 2010 and 2019**.
  - Custodial death is the demise of an individual when he is detained or when he is under the custody of the Police Authorities.
- Of the 100 average cases, about 3.5 persons allegedly died due to injuries caused by policemen and can be **attributed to custodial violence.**

Countering custodial violence:

- The article discusses some of the measures that can help in addressing the issue of custodial violence and help improve the human rights protection regime in police stations.

Reducing arrests:

- The most important measure to reduce instances of custodial violence would be to reduce the number of arrests. This would help reduce the chances of violence in custody.
- Despite clearly defined laws and judicial precedents (**Arnesh Kumar v. State of Bihar, 2014**) which mandate arrest only in certain circumstances, the police have resorted to unnecessary arrests at times.
- The Supreme Court in a recent judgment held that each arrest must be necessary and justified and that having the authority to arrest is alone not sufficient.

Separating investigative and law and order wings:

- The investigative functions and the maintenance of law and order functions of the police should be clearly demarcated and preferably separate forces

should be allocated. The **separate investigative wing will do more professional investigation and will not use unwarranted methods like torture** to extract a confession from the accused.

- o This has been recommended by various commissions and committees as well like the National Police Commission (1977-81), the Law Commission in its 154th report (1996) and the **Malimath Committee Report (2003)** and even the Supreme Court in **Prakash Singh v. Union of India (2006).**
- **Adequately resourced investigative wing in terms of human resources, funding and infrastructure** can help bridge the large gap in demand and availability of investigative officers.

Implementation of guidelines issued in D.K. Basu v. State of West Bengal (1996) case:

- The judgment in the D.K. Basu v. State of West Bengal (1996) marks a landmark in the fight against custodial violence.
- The Supreme Court had laid down guidelines to check custodial torture and increase transparency and responsibility of the police officer effecting an arrest.
  - o Mandatory providing of **information to a friend or relative** about the arrest
  - o **Compulsory medical examination**
  - o Permission to meet a lawyer
- The right implementation of these guidelines will go a long way in addressing the issue of custodial violence.

Installation of CCTV cameras:

- **The lack of effective legal representation at police stations leads to a lack of accountability on the part of the police officers** and this becomes a huge detriment to arrested or detained persons.
- Installation of CCTV cameras in police stations will help in checking the violation of human rights in police stations. Mandatory storage facility of audio-video recording for 18 months must be ensured.
- An independent committee could study the footage and periodically publish reports of its observations.

Punishment to the guilty:

- The police officers guilty of custodial violence must be punished severely after a **thorough and time-bound judicial inquiry.** A swift and severe punishment will act as a **deterrent to police officers.**

Educating the police force:

- The police officers must be **sensitised regularly on the issue of custodial violence** and be encouraged to employ **scientific tools of interrogation** like the lie detection test, narco test and brain fingerprinting test.
  - o Brain fingerprinting is a lie detection technique that uses electroencephalography (EEG) to determine whether specific information is stored in a subject's brain.
- The **installation of display boards on human rights** to disseminate information about the constitutional right to legal aid and the availability of free legal aid services may deter police excesses.

GS 3 : Economy, Science and Technology,Environment

5. Free and Open Source Software has great potential in government applications

In News

Recognising its potential, in 2015, the Indian government announced a policy to encourage open source instead of proprietary technology for government applications. However, the true potential of this policy is yet to be realised.

Advantages of FOSS

- Free and Open Source Software (FOSS) today presents an alternative model to build digital technologies for population scale.
- **Freedom to modify:** Unlike proprietary software, everyone has the **freedom to edit, modify and reuse open-source code.**
- **Reduced cost and innovation:** This results in many benefits — **reduced costs,** no vendor lock-in, the ability to customise for local context, and **greater innovation** through wider collaboration.
- **Use in public service delivery:** We have seen some great examples of public services being delivered through systems that use FOSS building blocks, including Aadhaar, GSTN, and the DigiLocker.
- FOSS communities can examine the open-source code for adherence to data privacy principles, help find bugs, and ensure **transparency and accountability.**

Challenges in adoption by government in GovTech

- In 2015, the Indian government announced **a policy to encourage open source** instead of proprietary technology for government applications.
- Several misconceptions remain in the understanding of FOSS, especially for GovTech.
- **Trust issue:** "Free" in FOSS is perceived to be "free of cost" and FOSS is often mistaken to be less trustworthy and more vulnerable, whereas FOSS can actually create more trust between the government and citizens.
- However, Many solutions launched by the government including Digilocker, Diksha, Aarogya Setu, CoWIN — built on top of open-source digital platforms — have benefited from valuable inputs provided by volunteer open-source developers.
- Such inputs have immensely helped in improving solutions and making them more robust.
- **Accountability issue:** In the case of FOSS, there appears to be an absence of one clear "owner", which makes it harder to identify who is accountable.
- While this concern is legitimate, **there are ways to mitigate it.**
- For example, by having the government's in-house technical staff understand available documentation and getting key personnel to join relevant developer communities.

Way forward for greater adoption of FOSS in GovTech

- Here is a four-step path to make this vision a reality.
- **1) Incentivise FOSS in government:** The government's policy requires all tech suppliers to submit bids with open source options.
- Suppliers also need to justify in case they do not offer an open-source option
- Sourcing departments are asked to weigh the lifetime costs and benefits of both alternatives before making a decision.
- While this serves as a good nudge, policy can perhaps go a step further by formally **giving greater weightage to FOSS-specific metrics** in the evaluation criteria in RFPs, and offering recognition to departments that deploy FOSS initiatives, such as, a special category under the Digital India Awards.
- **2) Create repository of GovtTech reacy solutions:** a repository of "GovTech ready" building blocks that are certified for use in government and audited for security compliances is needed.
- Creating a repository of ready-to-use "GovTech-ised" building blocks, can help departments quickly identify and deploy FOSS solutions in their applications.
- **3) Encourage FOSS innovation**: FOSS innovations can be encouraged through "GovTech hackathons and challenges", bringing together the open-

source community to design solutions for specific problem statements identified by government departments.

- One such challenge — a **#FOSS4Gov Innovation Challenge** — was recently launched.
- **4) Create institutional mechanism:** A credible institutional anchor is needed to be a home for FOSS led innovation in India.
- Such an institution can bring together FOSS champions and communities that are scattered across India around a shared agenda for collective impact.
- Kerala's International Centre for Free & Open Source Software (ICFOSS) is a great example of such an institution.

Conclusion

With an IT workforce of more than four million employees, what we need is a concerted push to harness the biggest promise that FOSS holds.

6. Biofortified food can lead India from food security to nutrition security

In News

On August 15, Prime Minister Narendra Modi announced that, by 2024, rice provided to the poor under any government scheme — PDS, mid-day-meal, anganwadi — will be fortified.

Need for nutrition security in India

- 15.3 per cent of the country's population is undernourished.
- India has the highest proportion of "stunted" (30 per cent) and "wasted" children (17.3 per cent) below five years of age, as per the FAO's recent publication, 'The State of Food Security and Nutrition in the World, 2021'.
- These figures indicate that India is at a critical juncture with respect to nutritional security.
- **Other factors**: Other factors like poor access to safe drinking water and sanitation, low levels of immunisation and education, especially of women, contribute equally to this dismal situation.

India's journey towards nutrition security

- As per the ICAR website, they had developed 21 varieties of **biofortified staples** including wheat, rice, maize, millets, mustard, groundnut by 2019-20.
- These varieties **are not genetically modified.**

- These biofortified crops have 1.5 to 3 times higher levels of protein, vitamins, minerals and amino acids compared to the traditional varieties.
- A research team at the National Agri-Food Biotechnology Institute in Mohali has also developed biofortified coloured wheat (black, blue, purple) that is **rich in zinc and anthocyanins.**
- The HarvestPlus programme of the Consultative Group for International Agricultural Research (CGIAR) have been working closely with ICAR, to improve the access of the poor in India to iron-rich pearl millet and zinc-rich wheat.
- Globally, more than 40 countries have released biofortified crops, benefitting over 48 million people.
- Leveraging science to attack the complex challenge of malnutrition, particularly for low-income and vulnerable sections of society, can be a good intervention.

Challenges in securing nutrition security

- **Access to nutritious food** is only one of the determinants of nutrition.
- Other factors like poor access to safe drinking water and sanitation, low levels of immunisation and education, especially of women, contribute equally to this dismal situation.
- **Need for multi-pronged approach:** It must be recognised that in the long run, India needs a multi-pronged approach to eliminate the root cause of this complex problem.

Way forward: Multi-pronged approach

1) Focus on mother's education

- There is a direct correlation between mother's education and the **wellbeing of children.**
- **Targeted programmes** for improving the educational status of girls and reducing the school dropout rates need to be promoted.
- **The Global Nutrition Report (2014)** estimates that every dollar invested in a proven nutrition programme offers benefits worth 16 dollars.

2) Scale-up innovation in biofortified food by supporting policies

- Innovations in biofortified food can alleviate malnutrition only when they are scaled up with supporting policies.
- This would require increasing expenditure on agri-R&D and incentivising farmers by linking their produce to lucrative markets **through sustainable value chains** and distribution channels.

- The government can also rope in the private sector to create a market segment for premium-quality biofortified foods.
- For instance, trusts run by the TATA group are supporting different states to initiate **fortification of milk with Vitamin A and D.**

3) National awareness drive

- A national awareness drive on the lines of the "Salt Iodisation Programme" launched by the government in 1962 can play an important role at the individual and community levels to achieve the **desired goals of poshan for all.**
- Branding, awareness campaigns, social and behavioural change initiatives, can promote consumption of locally-available, nutrient-dense affordable foods among the poor and children.

Conclusion

Biofortified food is a step in the right direction, however, other factors should also be given equal attention in securing national security in India.

7. Poultry Farm Establishment Rules

Small and marginal poultry farmers in India will now have to take measures similar to their bigger counterparts to prevent environmental pollution, according to new guidelines issued recently by Central Pollution Control Board (CPCB).

What are the new guidelines?

(A) Establishment

- **Consent to Operate:** The new guidelines state that for establishing and operating a medium-sized poultry farm of 25,000-100,000 birds, a farmer will have to obtain a certificate of Consent. Permission will be valid for 15 years.
- **Designated Authority:** This will have to be taken from the State Pollution Control Board or Committee under the Water Act, 1974 and the Air Act, 1981. The Animal Husbandry Department will be responsible for implementing the guidelines at the state and district level.
- **Location:** A farm should be set up 500 metres away from a residential area, 100 metres from rivers, lakes, canals and drinking water sources, 100 metres from national highways and 10-15 metres from village footpaths and rural roads.

(B) Operational directives

- **Ventilated farms:** The guidelines state that the poultry farm should have a ventilated room to reduce the gaseous pollution from the birds.
- **Wastewater management:** Also, care should be taken so that poultry faeces do not mix with running water or any other pesticide.
- **Manure generation:** Farmers of small- and medium-sized poultry farms will have to arrange for manure. After use, the water from a poultry farm must be collected in a tank. The guidelines suggest using it in horticulture.
- **Disposal of deads:** Emphasis has also been given to the daily removal of birds that die, through burial, without harming the environment. Burial should be done three metres above the groundwater level.

(C) Large/ Small Farmer

The new guidelines have defined as to who is a 'large' or 'small' poultry farmer in India.

- Those who have 5,000-25,000 birds are small farmers.
- Those who have more than 25,000 and less than 100,000 birds are medium farmers.
- Those who have more than 100,000 birds are large farmers.

Why need such regulation?

- Poultry, hatchery and piggery were considered 'green' by the Central Pollution Control Board (CPCB) in its guidelines of 2015.
- This meant they were exempt from the air, water and environmental protection laws.
- Gaseous emissions and waste are major problems in poultry farming.
- The faeces of poultry birds emit gaseous ammonia, hydrogen sulphide and methane, all of which produce odours.

Poultry sector of India

- According to the 20th Livestock Census 2020, there are 851.8 million poultry birds in India.
- About 30 per cent (250 million) of this is 'backyard poultry' or small and marginal farmers.
- According to the 19th Livestock Census, the number of such farmers is about 30 million.
- Chickens, turkeys, ducks, geese, etc, are reared in poultry farms for meat and eggs. Chickens that are reared for eggs are called 'laying hens' or 'layers'. Those reared for meat are called 'broilers'.

Prelims Practice Questions

1. Consider the following statements regarding 'Sambhar lake':

1. It is India's largest inland saline water body.
2. It was declared a Ramsar site in 1990.
3. It receives water from the Ghaggar river.

Which of the statements given above is/are correct?

A 1 only
B 1 and 2 only
C 2 only
D 1, 2 and 3

Answer : B

Explanation

- **'Sambhar lake'** is located 80 km south-west of Jaipur in east-central Rajasthan, it is the country's **largest inland saline water body. Hence, statement 1 is correct.**
    o Represents the depression of the Aravalli Range.
- It is famous for the production of brine/salt, houses one of the largest salt manufacturing units in the country.
    o Thousands of migratory birds every year.
- **A wetland of 'international importance' under the Ramsar Convention, declared in 1990. Hence, statement 2 is correct.**
- **Receives water from six rivers**, namely **Samaod, Khari, Mantha, Khandela, Medtha**, and **Roopangarh. Hence, statement 3 is not correct.**
- Mostly xerophytic type (Xerophyte is a plant adapted for growth under dry conditions).
- Flamingoes, pelicans and the waterfowls are commonly sighted.

2. Which of the following adds/add carbon dioxide to the carbon cycle on the planet Earth?

1. Volcanic action

2. Respiration
3. Photosynthesis
4. Decay of organic matter

Select the correct answer using the code given below.

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

Answer: c

Explanation:

- Photosynthesis is the process by which plants use sunlight, water, and carbon dioxide to create oxygen and energy in the form of sugar. Thus photosynthesis removes carbon di oxide from the atmosphere from the atmosphere.
- Volcanic action, respiration and decaying of organic matter adds carbon to the carbon cycle.

3. Consider the following statements regarding sweat equity:

1. It is a non-monetary contribution that the individuals or founders of a company make towards the company.
2. Startups and business owners use sweat equity to fund their companies.

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

- **Sweat equity** is a **non-monetary contribution** that the individuals or founders of a company **make towards the company**. Cash-strapped startups and business owners typically u**se sweat equity to fund their companies. Hence, statements 1 and 2 are correct.**

- It will be issued for providing the know-how or making available rights in the nature of intellectual property rights or value additions.
- The maximum yearly limit of sweat equity shares that can be issued by a listed company has been prescribed at 15% of the existing paid-up equity share capital within the overall limit, not exceeding 25% of the paid-up capital at any time.

4. Oodaaq Island recently seen in news is part of

   a. Japan
   b. Indonesia
   c. Greenland
   d. Antarctica

Answer: c

Explanation:

- Oodaaq or Oodap Qeqertaa is a bank of gravel and silt northeast of Greenland that has been considered by some to be the most northerly point of land on Earth, though a number of other places have also been given that title since its discovery.
- Scientists have recently discovered what is believed to be the world's northernmost landmass — a yet-to-be-named island north of Greenland that could soon be swallowed up by seawaters. The new island is 780 m north of Oodaaq.

5. With reference to Milky Sea Phenomenon, consider the following statements:

1. It is a rare form of marine bioluminescence.
2. The positive phase of Indian Ocean Dipole (IOD) creates the favourable conditions for milky sea genesis.

Which of the above statements is/are correct?

A 1 only
B 2 only
C 1 and 2

D Neither 1 nor 2

Answer : C

Explanation

- It is **a rare form of marine bioluminescence** where the nocturnal ocean surface produces a widespread, uniform and **steady whitish glow.**
  - Bioluminescence is **light produced by a chemical reaction within a living organism.**
  - It is also called mareel. **Hence, statement 1 is correct.**
- Luminous bacteria cause the particles they colonize to glow. The purpose of this glow **could be to attract fish that eat them.**
  - These bacteria thrive in the guts of fishes, so when their populations get too big for their main food supply, **a fish's stomach makes a great second option.**
- During its positive phase, the **Indian Ocean Dipole (IOD)** corresponds to warm/wet conditions with warm pooling waters on the western side of the Indian Ocean, and cool/dry conditions with strong easterly winds on the eastern side.
  - These winds generate upwelling of cool, nutrient-rich coastal waters which drift offshore with the currents, leading to algal blooms over a broad region, and **potentially, conditions favourable for milky sea genesis. Hence, statement 3 is correct.**

6. **Which of the following agency has setup a committee that recommended introduction of Cyber Insurance Policy?**

- a. Life Insurance Corporation of India (LIC)
- b. Reserve Bank of India (RBI)
- c. Insurance Regulatory and Development Authority of India (IRDAI)
- d. World Bank

Answer : c

Cyber Insurance Policy

- A committee set up by the Insurance Regulatory and Development Authority of India (IRDAI) has recommended the introduction of a cyber-insurance policy.

- In October 2020, the IRDAI had set up a committee for cyber liability insurance under P Umesh.
- Cyber insurance policy is a risk transfer mechanism for cyber risk.
- Cyber risk is commonly defined as exposure to harm or loss resulting from breaches of or attacks on information systems.
- This policy will protect the policyholders from cybercrimes.

Mains Practice Questions

1Q. Discuss the provisions related to Island Protection Zone, 2019 recently notified by the government. Critically examine their impact on the Islands of India. (250 words)

Approach

- Briefly introduce Island Protection Zone, 2019 notification.
- Describe the provisions of new notification.
- Give the impact of new notification.

2Q. Chinese pilgrims played a key role in the exchanges between ancient India and ancient China. Comment. (250 words)

Approach

- Mention some of the key Chinese pilgrims who visited India in the introduction.
- Explain the kind of exchanges that took place and how these pilgrims played a key role.
- Give a suitable conclusion.