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## **GS 2 : Polity, Governance, International Relations**

### **1. Plan to put Lakshadweep under Karnataka HC**

#### **Context:**

The Lakshadweep administration has mooted a proposal to shift **its legal jurisdiction from the Kerala High Court to the Karnataka High Court**.

#### **Background:**

- **Lakshadweep administration** has been facing widespread **protests over its policies**.
- As many as 23 applications, including 11 writ petitions, have been filed against the Administrator and also against the alleged high-handedness of either the police or the local government of the islands.
- The proposal for shifting the legal jurisdiction from the High Court of Kerala to Karnataka comes amid these developments.

#### **Details:**

- **The jurisdiction of a High Court can be shifted only through an Act of Parliament**, according to the law.
- According to **Article 241 of the Constitution**, "Parliament may by law constitute a high court for a Union Territory or declare any court in any such territory to be a high court for all or any of the purposes of this Constitution,".
- Clause 4 of the same article mentions that "nothing in this article derogates from the power of Parliament to extend or exclude the jurisdiction of a high court for a state to, or from, any Union Territory or part thereof".
- Legal experts opine that **changing of high court would also mean extra-burden on the exchequer** as all the cases, at present under trial, would have to be heard again afresh.

### **2. The comrades and their divergent perspectives**

#### **Context:**

- The article discusses the **increasingly divergent perspectives of India and Russia in global geopolitics** and analyzes its potential impact on bilateral relations.

#### Russia's perspectives:

##### On India-China standoff:

- Russian President through his recent statement on the India-China border standoff and ongoing de-escalation talks had emphasized the need to **debar any "extra-regional power" to interfere in the process.**
- The foreign policy experts point out this as an indication of **Russia's indifference towards India's legitimate concerns** and the downplaying of China's coercive military pressure against India.

##### On Quad and the Indo-Pacific strategy:

- Russia through its criticism of the Quad and the Indo-Pacific strategy has been reinforcing China's claim that the Quadrilateral Security Dialogue or Quad is aimed at containing Beijing's influence in the Indo-Pacific region.
- **Russia has rejected the Indo-Pacific construct in favour of the Asia-Pacific one** on the grounds that the Indo-Pacific construct is primarily an American initiative designed to contain both China and Russia.

##### India's deepening relationship with the West:

- Russia views the India-U.S. rapprochement as part of **U.S. attempts to expand its zone of influence.**

##### India's stand:

##### On standoff with China:

- India claims the Chinese incursion and break from the status quo as being factors for the current standoff and **terms China as the aggressor.**
- China's border moves seem to be part of its larger **effort to undermine India's global position** and to reduce India to a state of isolation and impotence in global affairs.
- Given **China's increasingly assertive behaviour**, which goes against all the conventional rules of international politics, India seems to be attempting to rally support for itself against Chinese hegemony.

##### On Quad and Indo-Pacific strategy:

- India's support for the Indo-Pacific construct is an indication of **India's attempt to re-imagine a new geostrategic maritime role for itself** beyond the confines of the Malacca Strait and the Gulf of Aden.
- India has repeatedly asserted that no country can have a veto on India's participation in the Quad and it will be led by its **national interest objectives**.

#### On strategic ties with the U.S. led west:

- The bitterness and mistrust between the Union of Soviet Socialist Republics (USSR) and China during the Cold War provided India leeway to use USSR as a counterweight against the Chinese. However, the **disintegration of the USSR** changed this. Russia was much weaker than the erstwhile USSR and incapable of helping India balance the potential threats from China and this **pushed India to diversify its relationships with other countries as an external balancing strategy against China**.
- Russia had been trying to build a trilateral grouping of Russia-India-China against a U.S.-led unipolar world. Though India did become a part of this grouping in the initial years, **China's dismissive attitude toward Indian capabilities, coupled with an emerging China-Pakistan nexus**, prevented the success of this trilateral. India, instead, invested its diplomatic energies in rapprochement with the United States and has **built a strategic partnership with the U.S.**
- Given **Russia's inability to influence the India-China relationship** and given the increasing hegemony of China, multilateral forums such as the Russia-India-China (RIC) grouping and BRICS (Brazil, Russia, India, China and South Africa) have little practical value for Indian diplomacy.
- India has become integrated in the global economic order and has strategic economic relations with the U.S. led West.
- India has **shed its traditional reliance on Russia for arms imports** and has started to buy sophisticated weapons from a wider global market including countries such as the U.S., Israel and France.
- As part of its external balancing strategy, **India has also deepened its ties with Japan and Australia**.
- The increasingly assertive behaviour of China seems to be only pushing India into a closer relationship with the U.S. which considers China a threat to its own global supremacy.

#### Other irritants in the bilateral relation:

- The **deepening engagement between Russia and Pakistan** has generated some unease in India. The increasing military cooperation via **defence equipment sales and "friendship" exercises** between the two armies point to the deepening of ties between the two countries.

**The author's take:**

- The article criticizes the current Russian foreign policy as being based on a flawed assessment of the current situation. It **warns against obsessive preoccupation with Russia's 'status' rivalry with the U.S.**
- The article suggests that Russia in fact stands to gain immensely from the multilateralism that the Indo-Pacific seeks to promote, and **being China's junior partner only undermines Russia's great-power ambitions.**

**Conclusion:**

- Despite some great changes in the global and regional politico-security environment, India has been able to maintain amicable ties with Russia. However, the recent events seem to be straining this bilateral relation.
- The divergent perspectives of India and Russia have only increased over the last few years.
- While **India continues to engage with Russia, it cannot endorse the Russian perspective on the Indo-Pacific and the Quad.**
- The recent **Geneva summit between the U.S. and Russian Presidents** holds immense significance for India given that a normalisation of relations between Washington and Moscow will have a profound impact not just on the two countries but will also diminish Russia's propensity to closely coordinate its South Asian policies with China.

The **Russian attitude toward China's growing power and influence will be the touchstone of Russia's relations with India** as an increasingly pro-Beijing Russia might adopt more aggressive blocking of India's policy agendas.

## **GS 3 : Economy, Science and Technology, Environment**

### **3. Pact signed to conserve rare turtle in Assam**

**Context:**

A major temple in Assam has signed a memorandum of understanding with two green NGOs for the long-term conservation of the rare freshwater black softshell turtle or the *Nilssonina nigricans*.

**Details:**

- A vision document 2030 was also launched after Turtle Survival Alliance India and Help Earth signed the pact involving the Hayagriva Madhava Temple Committee.
- The temple, revered by both Hindus and Buddhists, is at Hajo.

#### **Black softshell turtle:**

- Black softshell turtle (*Nilssonia nigricans*) is a **species of freshwater turtle**.
- It is found in **India (Assam) and Bangladesh**.
- It is called **Bostami turtle or Mazari**.
- Until sightings along the Brahmaputra's drainage in Assam, the black softshell turtle was thought to be "extinct in the wild" and confined only to ponds of temples in northeastern India and Bangladesh.
- The International Union for Conservation of Nature has in 2021 listed the turtle as "**critically endangered**".
- It **does not enjoy legal protection under the Indian Wildlife (Protection) Act of 1972**.
- It has **traditionally been hunted for its meat and cartilage, traded in regional and international markets**.
- Their shell is **light and flexible. This allows them to move more easily in open water, or in muddy lake bottoms**. It also allows them to move much faster on land than most turtles.

#### **4. Massive distribution of ex gratia will strain finances, says Centre**

##### **Context:**

**Government's response to petitions in the Supreme Court to pay 4 lakh compensation to the families of every COVID-19 victim.**

##### **Details:**

- The government responded to the petitions in SC stating that the COVID-19 **pandemic was not a one-time disaster** and a broader approach was needed for compensation.
  - Broader approach encompasses a different **set of 'Minimum Standards of Relief' focussed on public health interventions, social protection and economic recovery for the affected communities**.
- Its argument was that massive distribution of compensation across the country at this point would **dry up precious financial resources of the Centre and the States**.

- The finances of State governments and the Central government are already under **severe strain due to the reduction in tax revenues and increase in health expenses**.
  - If the entire State Disaster Response Funds get consumed on ex gratia compensation for COVID-19 victims, sufficient funds might not be available for organising COVID-19 response or to take care of other disasters like cyclones, floods, etc.
- Besides, the MHA opines that **granting ex gratia compensation for one disease while denying it for those accounting for a larger share of mortality would not be fair or proper**.

### 5. 'Concerns on IT rules are highly misplaced'

#### What's in News?

Following the experts' comments at the U.N. stating that the IT Rules, 2021 are not in line with international human rights principles, India replied saying that the concerns of the experts are highly misplaced.

#### Details:

- India defended the IT Rules saying that the Rules were **designed to empower ordinary users of social media, and the victims of abuse on social media platforms could have a forum for redressal of their grievances**.

#### IT Rules 2021:

- Information Technology (Guidelines For Intermediaries And Digital Media Ethics Code) Rules, 2021 was enacted by the government in February 2021.
- Several concerns had been raised by the social media platforms with respect to the new IT Rules.

### 6. What is Gain-of-Function Research?

With the re-emergence of the Wuhan lab-leak origin theory, questions are also being raised on what gain-of-function research is, and whether the benefits of conducting such research outweigh the risks of pathogens escaping from labs.



### **What is gain-of-function research?**

- In virology, gain-of-function research involves deliberately altering an organism in the lab, altering a gene, or introducing a mutation in a pathogen to study its transmissibility, virulence and immunogenicity.
- It is believed that this allows researchers to study potential therapies, vaccine possibilities and ways to control the disease better in future.
- Gain-of-function research involves manipulations that make certain pathogenic microbes more deadly or more transmissible.
- This is done by genetically engineering the virus and by allowing them to grow in different growth mediums, a technique called as serial passage.

### **Antithesis to this theory**

- There is also 'loss-of-function' research, which involves inactivating mutations, resulting in a significant loss of original function, or no function to the pathogen.
- When mutations occur, they alter the structure of the virus that is being studied, resulting in altered functions. Some of these significant mutations might weaken the virus or enhance its function.

### **Associated risks**

- Some forms of gain-of-function research reportedly carry inherent biosafety and biosecurity risks and are thus referred to as 'dual-use research of concern' (DURC).
- This indicates that while the research may result in benefits for humanity, there is also the potential to cause harm – accidental or deliberate escape of these altered pathogens from labs may cause even pandemics.

### **Essential component of vaccine development**

- The current medical countermeasures are often insufficient largely because of resistance mechanisms that lead to 'escape mutants', i.e., drug-resistant strains.
- There is, hence, a continual need to develop new antiviral drugs and additional options, such as immunotherapy, based on neutralizing monoclonal antibodies.
- Ultimately, gain-of-function studies, which enhance viral yield and immunogenicity, are required for vaccine development.



### **What is the situation in India?**

- In India, all activities related to genetically engineered organisms or cells and hazardous microorganisms and products are regulated as per the “Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells Rules, 1989”.
- Last year, the Department of Biotechnology issued guidelines for the establishment of containment facilities, called ‘Biosafety labs’, at levels two and three.
- The notification provides operational guidance on the containment of biohazards and levels of biosafety that all institutions involved in research, development and handling of these microorganisms must comply with.

### **Should research continue?**

- Scientists have differing opinions on the issue, particularly since the emergence of the COVID-19 pandemic.
- While those on the side of gain-of-function research say that it makes science and governments battle-ready for future pandemics, there have been a rising number of calls to suspend such research.
- Proponents of gain-of-function research believe that “nature is the ultimate bioterrorist and we need to do all we can to stay one step ahead”.
- Some researchers think it is time to stop such research.
- Science policymakers “must wrestle with defining the rare instances in which the benefits of experiments that enhance a virus’s capacity to survive and flourish in human hosts outweigh any risks.”

## THE INDIAN EXPRESS

### GS 2 : Polity, Governance, International Relations

#### 1. Centre must make way for states in Covid fight

##### Role of the States in health crisis

- Covid-19 pandemic is a national crisis calling for concerted efforts by both, the Government of India (GoI) and state governments.
- **Health is a state subject**, and the states have been pioneering many health programmes on their own, some with support and funding from the GoI, for a very long time.
- The number of employees in the health wing of the GoI is negligible as compared to that in any state government.
- The GoI must help them, motivate them to do better and assist them in their task.
- Also, the GoI must and can play **a major role is in vaccination**.

##### Role of the Central government

- It must try to augment supplies by encouraging companies to produce more and through imports/gifts.
- However, whatever it procures **must be allotted to states in proportion to their eligible population**.
- State governments must be involved in this policy.
- The **vaccination policy may be left to the state governments based on the allocation**.
- The GoI must also **augment supplies of critical medical goods** through imports and donations from friendly nations in view of their acute shortage.
- It must distribute them to the needy states **transparently and equitably**.

##### Steps that need to be taken

- Lockdowns need **to be lifted in a calibrated manner** depending on local conditions.
- Lockdowns are not the solution, they just buy breathing time which can be used by governments to ramp up capacity.

- State governments must set up efficient and well-functioning control rooms and telemedicine centres to guide people on home treatment and timely admission to hospitals.
- The **private sector** can also be fully involved in these efforts.
- Bed capacity must be increased in both private and public sectors, with all necessary requirements such as oxygen, medicines, and health workers.
- It is also important to put in place a **standard guidance protocol for health workers** and control rooms to guide patients through the disease.
- Enforcement of masks and distancing in public places must go on till the country is fully vaccinated.
- The measures suggested above require hard work and efficient management by state governments, by a team of reputed professionals and civil servants.
- **Daily briefing by a professional, not a politician**, is the need of the hour at both the Centre and state level, giving some confidence and assurance to the public.

## Conclusion

The central government must realise that states are on the forefront in this war, and therefore, play a supporting and proactive role. It has only a minor, behind-the-scenes role in the health sector.

## 2. Section 27A of the NDPS Act

Last week, the Tripura High Court, in a significant verdict, discovered an oversight in drafting the 2014 amendments to the Narcotics Drugs and Psychotropic Substances Act, 1985.

### What is Section 27A?

- The NDPS had unintentionally rendered a key provision of the Act, Section 27A which provides for punishment of those financing illicit trafficking, inoperable.
- This section has been consistently evoked since a year after the alleged suicide of a notable Bollywood actor after drugs intoxication.

### What is the provision?

- The NDPS Act, 1985 is the principal legislation through which the state regulates the operations of narcotic drugs and psychotropic substances.
- It provides a stringent framework for punishing offenses related to illicit traffic in narcotic drugs and psychotropic substances through imprisonments and forfeiture of property.

- Section 27A of the NDPS Act, 1985, prescribes the punishment for financing illicit traffic and harboring offenders.
- The court may, for reasons to be recorded in the judgment, impose a fine exceeding two lakh rupees."

### **So why is this provision inoperable?**

- The text of the provision says that offences mentioned under Section 2(viia) sub-clauses i-v are punishable through Section 27A.
- However, Section 2 (viia) sub-clauses i-v, which is supposed to be the catalog of offences, does not exist after the 2014 amendment.
- So, if Section 27A penalises a blank list or a non-existent provision, it can be argued that it is virtually inoperable.

### **What was the 2014 amendment?**

- In 2014, a key amendment was made to the NDPS Act to allow for better medical access to narcotic drugs.
- Since the regulation under NDPS was very stringent, despite being a leading manufacturer of morphine, an opioid analgesic used as a painkiller, it was difficult to access the drug even for hospitals.

### **Exceptions for essential drugs**

- The 2014 amendment essentially removed state-barriers in transporting, licensing drugs classified as "essential narcotic drugs", and made it centralized.
- This was done by first introducing a provision in Section 2 that defines essential narcotic drugs, and subsequently in Section 9 allowing the manufacture, possession, transport, import inter-State, export inter-State, sale, purchase, consumption and use of essential narcotic drugs.
- The amendment to add the definition of essential narcotic drugs re-lettered the old Section 2(viii)a that was the catalog of offences as Section 2(viii)b, and under the Section 2(viii)a, defined essential narcotic drugs.
- However, the drafters missed amending the enabling provision in Section 27A to change Section 2(viii)a to Section 2(viii)b.

### **How was this error noticed?**

- In 2016, an accused sought bail before a special judge in West Tripura in Agartala citing this omission in drafting.
- The accused's plea was that since Section 27A penalized a blank list, he could not be charged under the offence.
- The district judge then referred the case to the Tripura High Court.

### What did the HC decide?

- The Law Ministry had argued that the court must overlook the omission and read the legislation as a whole. It also told the court that the provision would be amended to rectify the dissonance.
- The Tripura HC agreed with the government's view, but said that it may not be the best solution.
- The amendment is yet to take place. However, criminal laws cannot be amended retrospectively.
- Article 20 of the Constitution guarantees protection against double jeopardy.
- So even if the amendment is brought in, the result of the drafting error could lead to more constitutional questions being raised.

### 3. What is Summer Solstice?

The summer solstice will happen today around 9:02 am on Monday (Indian Standard Time).

#### What is Summer Solstice?

- Solstice means “sun stands still” in Latin.
- The longest day of 2021 for those living north of the Equator is June 21.
- This day is characterized by a greater amount of energy received from the sun.
- In technical terms, this day is referred to as the summer solstice, the longest day of the summer season. It occurs when the sun is directly over the Tropic of Cancer, or more specifically right over 23.5-degree north latitude.

#### Why do we have summer solstice?

- Since Earth rotates on its axis, the Northern Hemisphere gets more direct sunlight between March and September over the course of a day.
- This also means people living in the Northern Hemisphere experience summer during this time.
- The rest of the year, the Southern Hemisphere gets more sunlight.
- During the solstice, the Earth's axis — around which the planet spins, completing one turn each day — is tilted in a way that the North Pole is tipped towards the sun and the South Pole is away from it.

#### Some other facts

- Summer solstice does not mean the earliest sunrise or latest sunset.

- Although June 21 will be the longest day in 2021, it does not necessarily mean that it brings the earliest sunrise or latest sunset.
- It depends on the latitudinal location of the country.

#### 4. World Sickle Cell Disease Day 2021

##### Why in News

To commemorate the **World Sickle Cell Disease (SCD) Day** on **19<sup>th</sup> June**, the **Ministry of Tribal Affairs (MOTA)** flagged off mobile vans under the **Unmukt project** for strengthening screening and timely management of SCD in tribal districts of Jharkhand and Chhattisgarh.

- **The United Nations General Assembly (UNGA)** adopted a resolution recognising SCD as a public health problem on **22<sup>th</sup> December, 2008**.
- The UNGA also recognised SCD as one of the first **genetic diseases**.

##### Key Points

- **Sickle Cell Disease:**
  - It is **an inherited blood disease** which is most common among people of African, Arabian and Indian origin.
  - It is a group of disorders that **affects hemoglobin, the molecule in red blood cells that delivers oxygen** to cells throughout the body.
  - People with this disease have atypical hemoglobin molecules called **hemoglobin S, which can distort red blood cells into a sickle, or crescent shape**.
    - This **blocks blood flow and oxygen from reaching all parts of the body**.
- **Symptoms:**
  - It can cause **severe pain**, referred to as sickle cell crises.
  - Over time, people with sickle cell disorders can experience **damage to organs including the liver, kidney, lungs, heart and spleen**. Death can also result from complications of the disorder.
- **Treatment:**
  - Medication, blood transfusions and rarely a bone-marrow transplant.
- **Related Data:**
  - India alone is home to about **1,50,000 patients with SCD and about 88% of Sickle Cell Anemia (SCA) cases in Asia**.



- The disease in India occurs predominantly in eastern **Gujarat, Maharashtra, Madhya Pradesh, Chhattisgarh, western Odisha** and in pockets of the **Nilgiri Hills in north Tamil Nadu and Kerala**.
- The disease is **prevalent among tribal communities** (including children).
  - As per MOTA, SCD is affecting more women and children and nearly **20% of tribal children with SCD die before reaching the age of two, and 30% children die before reaching adulthood**.
- **Challenges:**
  - **Social Stigma and Prevalence among Tribal Population** (where access to care for SCD is limited).
  - **School Drop Out:**
    - Children with sickle cell disease often have to drop out from school.
  - **Policy Issue:**
    - The delayed implementation of the **2018 draft policy on haemoglobinopathies**.
    - The policy aims to provide evidence-based treatment for patients and reduce the number of new-born children with sickle cell disease through initiatives such as the Sickle Cell Anaemia Control Program, screening and prenatal diagnosis.
- **Initiatives by India:**
  - **Initiative by the Ministry of Tribal Affairs:**
    - **SCD Support Corner**, a portal to collect real time data and provide relevant information related to Sickle Cell.
      - It will help in making a **Central Repository of data**.
    - An '**Action Research**' project under which **Yoga** dependent lifestyle is promoted to reduce the complications in the patient suffering from this disease.
  - **Expanded Screening:**
    - Certain states, such as Chhattisgarh and Gujarat, have **expanded their screening programmes from hospital to school-based screenings**.
    - Extrapolating such screening efforts and implementation strategies to other states will help **map the prevalence of the disease**.
  - **Disability Certificate:**
    - The Ministry of Social Justice and empowerment has increased the validity of **disability** certificates for SCD patients from **1 year to 3 year**.



## GS 3 : Economy, Science and Technology, Environment

### 5. How green are India's agri-exports?

#### India's agri-exports

- **Agri-exports touched \$41.8 billion in FY 2020-21**, registering a growth of 18 per cent over the previous year.
- Amongst the various agri-commodity exports, rice ranks first with 17.7 million tonnes valued at \$8.8 billion, **roughly 21 per cent of the total value of agri-exports**.
- It is followed by marine products (\$6 billion), spices (\$4 billion), bovine (buffalo) meat (\$3.2 billion) and sugar (\$2.8 billion).

#### Trend analysis of agri-exports

- During the last seven years, agri-exports have remained lower than the level reached in **FY2013-14 (\$43.3 billion)**.
- That was when the **highest agri-trade surplus (exports minus imports) was generated (\$27.8 billion)**.
- That was also when Indian agriculture was most globally integrated, with agri-trade (exports plus imports) **touching 20 per cent of the agri-GDP**.
- It has slid to 13.5 per cent by FY2020-21, indicating India is becoming **less globally competitive in exports and more protectionist in imports**, presumably in the name of Atmanirbhar Bharat.
- It is high time to **review current agri-trade policies** and accompanying tariff structures.

#### Why sustainability of agri-exports is a concern?

- From a strategic point of view, however, one must ask whether this **growth rate can be sustained over a longer period**, and the implications it has for Indian agriculture.
- **Water consumption:** India is a water-stressed country with per capita water availability of 1,544 cubic metres in 2011, down from 5,178 cubic metres in 1951.
- It is well known that a kg of sugar has a **virtual water intake of about 2,000 litres**.
- In 2020-21, India exported 7.5 million tonnes of sugar, implying that at least 15 billion cubic metres of water was exported through sugar alone.
- Rice, needs around **3,000 to 5,000 litres of water** for irrigating a kg, depending upon topography.

- Also, rice cultivation contributes to more than **18 per cent of the GHG emission generated from agriculture**.
- **Subsidies:** Power and fertiliser subsidies account for about 15 per cent of its value in states like Punjab and Haryana.
- If these subsidies are withdrawn, rice will not be as preferred a crop with farmers as it is today.

### Way forward

- Farming practices such as **alternate wetting drying (AWD), direct-seeded rice (DSR) and micro-irrigation** will have to be taken up on a war footing.
- Farmers may be **incentivised and rewarded to save water**, switch from paddy and sugar **to other less water guzzler crops, and reduce the carbon footprint**.
- It is high time that policymakers revisit the entire gamut of rice and sugar systems from their MSP/FRP to their production in an environmentally sustainable manner.
- At least in the case of rice, procurement will have to be **limited to the needs of PDS**, and within PDS, it is high time to introduce the **option of direct cash transfers**.

### Conclusion

To maintain the sustainability of the agri-exports, crops must be produced efficiently and with minimal subsidies. The government needs to take steps to ensure that with rice and sugar.

## 6. Green Hydrogen Initiatives involving BRICS nations

India is all set to host a two-day summit on Green Hydrogen initiatives involving the BRICS nations.

### What is Green Hydrogen?

- Hydrogen, when produced by electrolysis using renewable energy is known as Green Hydrogen which has no carbon footprint.
- This gives hydrogen the edge over other fuels to unlock various avenues of green usage.
- However, challenges lie in terms of technology, efficiency, financial viability, and scaling up which the summit will aim to address.

## Applications of green hydrogen

- Green hydrogen has innumerable applications.
- Green Chemicals like ammonia and methanol can directly be utilized in existing applications like fertilizers, mobility, power, chemicals, shipping among others.
- Green Hydrogen blending up to 10 percent may be adopted in CGD networks to gain widespread acceptance.
- Further scaling up with greening of hard to abate sectors like steel and cement through hydrogen is to be explored.
- Many countries have brought out their strategies and defined targets and roadmaps based on their resources and strengths.

## 7. Biotech-KISAN Programme

### Why in News

The **Ministry of Science and Technology** has issued a **Special Call for the NorthEast Region** as a part of its **Mission Programme “Biotech-Krishi Innovation Science Application Network (Biotech-KISAN)”**.

### Key Points

- **About:**
  - It is a **scientist-farmer partnership** scheme **launched in 2017**.
  - It is a **pan-India program**, following a **hub-and-spoke model** and stimulates entrepreneurship and innovation in farmers and empowers women farmers.
  - The **Biotech-KISAN** hubs are expected to fulfil the technology required to generate agriculture and bio-resource related jobs and better livelihood ensuring biotechnological benefits to small and marginal farmers.
  - Farmers are also **exposed to best global farm management and practices**.
- **Ministry:**
  - This is a farmer-centric scheme developed by and with farmers under the **Department of Biotechnology, Ministry of Science and Technology**.
- **Objective:**
  - It was **launched for agriculture innovation** with an objective to connect science laboratories with the farmers to find out innovative solutions and technologies to be applied at farm level.

- **Progress:**
  - **146 Biotech-KISAN Hubs** have been established covering all 15 agroclimatic zones and 110 **Aspirational Districts** in the country.
  - The scheme has benefitted **over two lakhs farmers** so far by increasing their agriculture output and income. **Over 200 entrepreneurship** have also been developed in rural areas.
- **About the Present Call:**
  - The present call specifically focuses on the **North East Region (NER)** as it is predominantly agrarian **with 70% of its workforce** engaged in agriculture and allied sector for livelihood.
  - The region produces **merely 1.5 %** of the country's food grain and continues to be a **net importer of food grains** even for its domestic consumption.
  - The **NER has untapped potential** to enhance the income of the farming population by promotion of location specific crops, horticultural and plantation crops, fisheries and livestock production.
  - The **Biotech-KISAN Hubs in NER** will collaborate with the top scientific institutions across the country as well as State Agricultural Universities (SAUs)/ **Krishi Vigyan Kendras (KVKs)**/existing state agriculture extension services/system in the NER for demonstrations of technologies and training of farmers.

## Biotechnology in Agriculture

- **Agricultural Biotechnology:**
  - Agricultural biotechnology is a **range of tools**, including traditional breeding techniques, that **alter living organisms, or parts of organisms**, to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses.
  - Modern biotechnology today includes the tools of **genetic engineering**.
- **Examples:**
  - **Genetically Modified Organisms (GMO):** These are plants, bacteria, fungi and animals whose genes have been altered by manipulation. **GM plants** (Bt Cotton) have been useful in many ways.
  - **Biopesticide: Bacillus thuringiensis** is a **naturally occurring soil bacterium** that causes disease on insect pests. It is **accepted in organic farming and is considered ideal for pest management** due to its low cost, ease of application, high virulence and narrow host specificity.
- **Benefits:**
  - GMO leads to a number of advantages in the crops which include - there is **less loss after harvest**, the crops **can be modified to have additional nutrients value** for human welfare.

- The use of some of these crops **can simplify work and improve safety for farmers**. This allows farmers to spend less of their time managing their crops and **more time on other profitable activities**.
- **Disadvantages:**
  - **Antibiotic Resistance:** There is a concern that new **antibiotic-resistant bacteria** could emerge which would be difficult to tackle with conventional antibiotics.
  - **Potential of 'superweeds':** The transgenic plants could pollinate with the unwanted plants (weeds) and thereby relay the gene of herbicide-resistance or pesticide-resistance into them, thereby converting them into 'superweeds'.
  - **Loss of Biodiversity in Organisms:** The extensive use of agritech varieties of seeds have made some agriculturists fearful as this may hurt the biodiversity of plant species.
    - The extensive use of GMO varieties is because of the fact that they are more profitable and drought resistant which has made farmers abandon their traditional varieties of plants.

**Prelims practice Questions**

**1. Black money is generated in which of the following ways?**

1. Tax evasion
2. Tax avoidance
3. Smuggling
4. Hawala
5. Tax planning

**Choose the correct option:**

- a. 1, 3, 4 and 5 only
- b. 1, 3 and 4 only
- c. 3 and 4 only
- d. 1, 2, 3 and 4 only

**Answer: d**

**Explanation:**

- Tax evasion, tax avoidance, smuggling and hawala transactions lead to generation of black money.
  - Tax evasion is where an entity/ a person wilfully does not pay taxes that are due to the government.
  - Tax avoidance is where an entity takes advantage of the existing loopholes in the system and avoids paying taxes. This is not illegal.

- Hawala is an informal method of transferring money without any physical money actually moving. It is described as a “money transfer without money movement
- Tax Planning involves ensuring savings on taxes while simultaneously conforming to the legal obligations and requirements of the tax laws hence it does not amount to generation of black money.

**2. Consider the following statements regarding National Career Service (NCS):**

1. NCS was launched within the umbrella of the e-governance plan.
2. The Ministry of Labour & Employment is the nodal ministry for the implementation of NCS.

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

- The **National Career Service (NCS)** was launched in 2015, within the **umbrella of the e-governance plan. Hence, statement 1 is correct.**
  - It is a one-stop solution that provides a wide array of employment and career related services to the citizens of India.
- The **Ministry of Labour & Employment is the nodal ministry** for the implementation of the scheme. **Hence, statement 2 is correct.**
- The NCS project reaches out to the people of this country through its three essential pillars i.e.
  - A well designed ICT based portal which is NCS portal,
  - Country wide set up of Model Career Centers and
  - Interlinkage with all the states through employment exchanges.



3. Consider the following statements regarding the 'World Competitiveness Index, 2021':

1. The Index is released by the World Economic Forum (WEF).
2. India is the second best performing nation in the Index among all the BRICS nations.

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 : B

Explanation

- The **World Competitiveness Index** is a comprehensive annual report and worldwide reference point on the competitiveness of countries.
  - The index is released by the **Switzerland based Institute for Management Development (IMD)**. hence, **statement 1 is not correct.**
- As per the **World Competitiveness Index 2021**, among the BRICS nations, **India ranked second (43<sup>rd</sup>) after China (16<sup>th</sup>)**, followed by Russia (45<sup>th</sup>), Brazil (57<sup>th</sup>) and South Africa (62<sup>nd</sup>). **Hence, statement 2 is correct.**
  - India's strengths lie in investments in telecoms (1<sup>st</sup>), mobile telephone costs (1<sup>st</sup>), ICT services exports (3<sup>rd</sup>), remuneration in services professions (4<sup>th</sup>) and terms of trade index (5<sup>th</sup>).
  - India's performance is the worst in sub-indices such as broadband subscribers (64<sup>th</sup>), exposure to particulate pollution (64<sup>th</sup>), human development index (64<sup>th</sup>), GDP per capita (63<sup>rd</sup>) and foreign currency reserves per capita (62<sup>nd</sup>) among others.

4. Consider the following statements:

1. Tianhe is China's own space station module in lower earth orbit.
2. China is the third country to carry out a manned mission on its own.

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

- The Shenzhou-12 craft connected with the Tianhe space station module from the Jiuquan launch center in Gobi Desert.
  - **Tianhe core module** is the first module to the Tiangong space station. It was launched into orbit on 29 April 2021. **Hence, statement 1 is correct.**
- China is the **third country** after the former Soviet Union and the United States to carry out a manned mission on its own. **Hence, statement 2 is correct.**
- China is **not a participant in the International Space Station (ISS)**, largely as a result of US objections to the Chinese program's secrecy and close military ties.
  - The ISS is a joint project between five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and b (Canada).

5. Consider the following statements:

1. The Governor may issue ordinances under Article 213 of the Indian Constitution.
2. The Governor is not bound by the advice of his Council of Ministers (CoM).

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

**Constitutional Provisions Related to Governor**

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

- A Governor is appointed by the President and is a nominee of the Central Government.
  - It is stated that the Governor has a dual role.
- He is the constitutional head of the state, **bound by the advice of his council of ministers (CoM). Hence, statement 2 is correct.**
  - He functions as a vital link between the Union Government and the State Government.
- Articles 157 and 158 specify eligibility requirements for the post of governor.
- Governor has the power to grant pardons, reprieves, etc. (Article 161).
- There is a CoM with the CM at the head to aid and advise the Governor in the exercise of his functions, except some conditions for discretion. (Article 163)
- The Governor appoints the Chief Minister and other Ministers (Article 164).
- Governor assents, withholds assent, or reserves the bill for the consideration of the President passed by the Legislative Assembly (Article 200).
- Governors may **promulgate the Ordinances** under certain circumstances (Article 213). **Hence, statement 1 is correct.**

**6. GeM- SAHAY Project, sometimes seen in the news recently, is a project on the GeM platform, tailored to meet the specific needs of?**

- a. Self Help Groups
- b. UNICORN Startups
- c. Minor Forest Producer Organizations
- d. Micro, Small and Medium Enterprises

Answer : d

- *GeM is collaborating with the Indian Software Product Industry Round Table (iSPIRT), a non-profit tech think tank's volunteer team for the implementation of the GeM- SAHAY Project.*

**GeM- SAHAY Project**

- The project has been tailored to meet the specific needs of MSMEs on the GeM platform.
- Sellers applying for the loan facility will experience a seamless end to end digital experience with a mobile application.
- Through the 'GeM SAHAY' app, loan disbursement will be instantaneous, instead of the conventional in-principle approval of loan that may very often not culminate in an actual disbursal.

- This facility will provide GeM sellers who are sole proprietors, with the best loan offers from top lenders in the country including public sector banks, private banks and NBFCs.
- The GeM SAHAY platform is 'lender agnostic', allowing for any lender, duly regulated by the Reserve Bank of India, to participate and provide capital and smart collection accounts to the Sellers on GeM.

### **Mains Practice Questions**

**1Q) Recent farmer's protest demand for a deeper analysis of the mandi system in India and associated reforms. Analyse (250 words)**

#### **Approach**

- Explain the context of recent farmers' protests and their main demands.
- Discuss the issues with replacement of mandi system in India.
- Highlight the associated reforms that need to be undertaken.
- Conclude suitably.

**2Q) "Forest rights are crucial for rejuvenation of the tribal economy". Discuss the issues with present forest rights and suggest a way forward. (250 words)**

#### **Approach**

- Introduce establishing a link between the forest rights and tribal economy.
- Discuss the issues associated with current forest rights.
- Suggest measures to implement the Forest Rights Act effectively.
- Write a coherent conclusion.

