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# CURRENT AFFAIRS

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## GS 2 : Polity, Governance, International Relations

### 1. Mullaperiyar Dam Issue

The Supreme Court has directed the Supervisory Committee to take an immediate and firm decision on the maximum water level that can be maintained at Mullaperiyar dam amidst torrential rains in Kerala.

#### In the news

- A report by United Nations has stated that the Mullaperiyar dam, situated in a seismically active area, faces the risk of failure.
- Earlier this year, the Supreme Court warned the TN Chief Secretary against the failure to give information on the rule curve for dam which decides the discharge of excess water.

#### Mullaperiyar Dam

- It is a **masonry gravity dam** on the Periyar River in Kerala.
- It is located on the **Cardamom Hills** of the Western Ghats in Thekkady, Idukki District.
- It was constructed between **1887 and 1895 by John Pennycuick** and also reached in an agreement to divert water eastwards to the Madras Presidency area.
- It has a **height of 53.6 m (176 ft)** from the foundation, and a length of 365.7 m (1,200 ft).

#### Operational issue

- The dam is located in Kerala but is **operated and maintained by Tamil Nadu**.
- The catchment area of the Mullaperiyar Dam itself lies entirely in Kerala and thus not an inter-State river.
- In November 2014, the **water level hit 142 feet for first time** in 35 years.
- The reservoir again hit the maximum limit of 142 feet in August 2018, following incessant rains in the state of Kerala.
- Indeed, the **tendency to store water to almost the full level** of reservoirs is becoming a norm among water managers across States.

### The dispute: Control and safety of the dam

- Supreme court judgment came in February 2006, has allowed Tamil Nadu to raise the level of the dam to 152 ft (46 m) after strengthening it.
- Responding to it, the Mullaperiyar dam was declared an 'endangered' scheduled dam by the Kerala Government under the disputed Kerala Irrigation and Water Conservation (Amendment) Act, 2006.
- For Tamil Nadu, the Mullaperiyar dam and the diverted Periyar waters act as a lifeline for Theni, Madurai, Sivaganga, Dindigul and Ramnad districts.
- Tamil Nadu has insisted on exercising the unfettered colonial rights to control the dam and its waters, based on the 1886 lease agreement.

### Rule of Curve issue

- A rule curve or rule level specifies the storage or empty space to be maintained in a reservoir during different times of the year.
- It decides the fluctuating storage levels in a reservoir.
- The gate opening schedule of a dam is based on the rule curve. It is part of the "core safety" mechanism in a dam.
- The TN government often blames Kerala for delaying the finalization of the rule curve.

## 2. A 'bubbles of trust' approach to globalisation

### In News

An asymmetric globalisation favouring China allowed Beijing to attain power. It is now using that power to undermine liberal democratic values around the world.

### Asymmetric globalisation

- The Chinese market was **never open to foreign companies** in the way foreign markets are to Chinese firms.
- This is particularly true in the information and communications technology sector: foreign media, technology and software companies have always been walled out of Chinese markets.
- Meanwhile, Chinese firms rode on the globalisation bandwagon to secure significant market shares in open economies.

## Global retreat from globalisation and role of Quad

- We are currently witnessing a global retreat from the free movement of goods, services, capital, people and ideas.
- But this should not be understood as a reaction to globalisation itself, but of its skewed pattern over the past four decades.
- The Quad countries – Japan, India, Australia and the U.S. – have an opportunity to change tack and stop **seeing engagement with China** through the misleading prism of free trade and globalisation.
- It will be to their advantage to create a new form of economic cooperation consistent with their geopolitical interests.
- Indeed, without an economic programme, the Quad's **geopolitical and security agenda** stand on tenuous foundations.

## Economies inside bubbles of trust

- **Policies of self-reliance:** The popular backlash against China – exacerbated by the economic disruption of the pandemic – is pushing Quad governments towards **policies of self-reliance**.
- But while reorienting and de-risking global supply chains is one thing, pursuing **technological sovereignty** is inherently self-defeating.
- Worse still, **inward-looking policies** often acquire a life of their own and contribute to geopolitical marginalisation.
- There is a better way.
- A convergence of values and geopolitical interests means Quad countries are uniquely placed to envelop their economies inside bubbles of trust, **starting with the technology sector**.
- The idea of 'bubbles of trust' offers a cautious middle path between the extremes of **technological sovereignty and laissez-faire globalisation**.
- Unlike trading blocs, which tend to be insular and exclusive, bubbles tend to expand organically, attracting new partners that share values, interests and economic complementarities.
- Such expansion will be necessary, as the Quad cannot fulfil its strategic ambitions merely by holding a defensive line against authoritarian power.

## Way forward

- The U.S. is a global leader in intellectual property, Japan in high-value manufacturing, Australia in advanced niches such as quantum computing and cyber security, and India in human capital.
- This configuration of values, interests and complementary capabilities offers **unrivalled opportunities**.

- The Quad's Critical and **Emerging Technology Working Group**, announced in March 2021, is well placed to develop the necessary 'bubbles of trust' framework, which could be adopted at the next Quad summit.
- To be successful the Working Group must seek to strengthen geopolitical convergences, increase faith in each member state's judicial systems, deepen economic ties and boost trust in one another's citizens.
- There are fundamental differences between authoritarian and liberal-democratic approaches to the information age.
- The Quad cannot allow differences of approach on privacy, data governance, platform competition and the digital economy to widen.

## Conclusion

This agenda cannot be about substituting China. Rather, the approach would allow Quad countries to manage their dependencies on China while simultaneously developing a new vision for the global economy.

## 3. India's Central Asian outreach

### Context

The evolving situation in Afghanistan has thrown up renewed challenges for India's regional and bilateral ties with Central Asia and the Caucasus, prompting India to recalibrate its rules of engagement with the region.

### Background of India's relations with Central Asian countries

- After the breakup of the Soviet Union and the formation of the independent republics in Central Asia, India reset its ties with the strategically critical region.
- India provided financial aid to the region and established diplomatic relations.
- New Delhi signed the **Strategic Partnership Agreements (SPA)** with Kazakhstan, Tajikistan and Uzbekistan to stimulate defence cooperation and deepen trade relations.
- In 2012, New Delhi's '**Connect Central Asia**' policy aimed at furthering India's political, economic, historical and cultural connections with the region.
- However, India's efforts were stonewalled by **Pakistan's lack of willingness to allow India passage through its territory.**

## Renewed engagement with Central Asia

- The growing geostrategic and security concerns regarding the BRI's China-Pakistan Economic Corridor (CPEC) and its violation of India's sovereignty forced New Delhi to fix its lethargic strategy.
- Eventually, Central Asia became the link that placed Eurasia in New Delhi's zone of interest.
- India signed MoUs with Iran in 2015 to develop the Chabahar port in the Sistan-Baluchistan province that was in the doldrums from 2003.
- External Affairs Minister S. Jaishankar was in the region earlier this month.
- **In Kyrgyzstan**, Mr. Jaishankar **extended a credit line of \$200 million** for the support of development projects and signed an memorandum of understanding (MoU) on High-Impact Community Development Projects (HICDP).
- **Kazakhstan:** His next stop was the **Kazakhstan** capital, Nur Sultan, where he attended the 6th Foreign Ministers' **Conference on Interaction and Confidence-Building Measures in Asia (CICA)**.
- **Armenia:** Mr. Jaishankar has become the first Indian External Affairs Minister to visit **Armenia**.
- During the visit, Mr. Jaishankar also supported efforts for a peaceful solution of the **Nagorno-Karabakh conflict** between Azerbaijan and Armenia under the **Organization for Security and Cooperation in Europe's (OSCE) Minsk group**.

## Limits of SCO

- The **Shanghai Cooperation Organization (SCO)** was created in response to the threats of terrorism that sprang from Afghanistan.
- The Taliban re-establishing its supremacy over Afghanistan has also exposed the weaknesses of coalitions such as SCO.
- The SCO has been used by most member countries for their **own regional geostrategic and security interests**, increasing the **trust-deficit** and divergence within the forum.

## Way forward

- Most of the Central Asian leaders view India's Chabahar port **as an opportunity to diversify their export markets and control China's ambitions**.
- They have admitted New Delhi into the **Ashgabat Agreement**, allowing India access to connectivity networks to facilitate trade and commercial interactions with both Central Asia and Eurasia, and also access the natural resources of the region.

- **Rising anti-Chinese sentiments** within the region and security threats from the Taliban allow New Delhi and Central Asia to **reimagine their engagement**.
- Central Asian countries have been keen to have India as a partner as they have sought to diversify their strategic ties.

## Conclusion

India cannot afford to lose any time in recalibrating its regional engagements.

## 4. Ayushman Bharat Health Infrastructure Mission

PM has launched the Ayushman Bharat Health Infrastructure Mission (AB-HIM), one of the largest pan-India schemes for strengthening healthcare infrastructure.

### AB- Health Infrastructure Mission

- AB-HIM is being rolled out as **India's largest scheme to scale up health infrastructure**.
- It is aimed at **ensuring a robust public health infrastructure** in both urban and rural areas, capable of responding to public health emergencies or disease outbreaks.

### Key features

- **Health and Wellness Centres:** In a bid to increase accessibility it will provide support to 17,788 rural HWC in 10 'high focus' states and establish 11,024 urban HWC across the country.
- **Exclusive Critical Care Hospital Blocks:** It will ensure access to critical care services in all districts of the country with over five lakh population through 'Exclusive Critical Care Hospital Blocks'.
- **Integrated public health labs:** will also be set up in all districts, giving people access to "a full range of diagnostic services" through a network of laboratories across the country.
- **Disease surveillance system:** The mission also aims to establish an IT-enabled disease surveillance system through a network of surveillance laboratories at block, district, regional and national levels.
- **Integrated Health Information Portal:** All the public health labs will be connected through this Portal, which will be expanded to all states and UTs, the PMO said.

### Why is the scheme significant?

- India has long been in need of a ubiquitous healthcare system.
- A 2019 study has highlighted how access to public health care remained elusive to those living on the margins.
- The study found that 70 per cent of the locations have public healthcare services.
- However, availability was less in rural areas (65 per cent) compared to urban areas (87 per cent).
- In 45 per cent of the surveyed locations, people could access healthcare services by walking, whereas in 43 per cent of the locations they needed to use transport.

## 5. Afghan facing acute food crisis

### Context:

Executive director of the World Food Programme has said that Afghanistan is on the brink of one of the world's worst humanitarian crises with more than half the country facing "acute" food shortages.

### What's the issue?

**Taliban** has taken full control of Afghanistan. People have no jobs and incomes. Over 22 million Afghans will suffer food insecurity this winter as a drought driven by climate change adds to their woes. This will force them to choose between migration and starvation.

### Significance of Afghan stability :

- **Can have spill over to Neighbouring central Asian countries** like Tajikistan, Uzbekistan etc
- Taliban resurgence will **revive extremism in the region** and the region can become a safe sanctuary for Let,ISIS etc.
- Civil war in Afghanistan will lead to a **refugee crisis** in Central Asia and beyond.
- Afghanistan's stability will help the Central Asian countries with the shortest **access to the seaports of the Indian ocean.**
- Afghanistan has been an important link in the regional trade, cultural, playing the role of a connecting **bridge for Central and the rest of the world.**



### Why is it imperative now for India to engage with the Taliban?

- Taliban is now having a significant presence in Afghanistan.
- **India is already having huge investments in Afghanistan.** To secure assets worth \$3 billion, India should engage with all parties in Afghanistan.
- Taliban engaging with Pak deep state will not be in India's best interest.
- If India does not engage now Russia, Iran, Pakistan and China will emerge as the shapers of Afghanistan's political and geopolitical destiny, which for sure will be detrimental to Indian interests.
- The U.S. has announced a new, surprise formation of a **"Quad" on regional connectivity – U.S.-Uzbekistan-Afghanistan-Pakistan** that does not include India.
- India's effort to trade with Afghanistan Via Chabahar port in order to increase the economy on scale.

### Need of the hour:

- Urgent need to collectively act for the safety of Afghan civilians by checking violence by Taliban
- Afghanistan should be given enough space in Central Asian architectures like **SCO (Shanghai cooperation organisation)**
- **The USA, Iran, China, and Russia should actively involve India to maintain stability in Afghanistan.**
- Unified action for the refugee crisis if it arises.
- Indian engagement with Taliban to maintain peace with immediate neighbours.

## 6. Israel- Palestine issue

### In News:

Israel government has approved more than 1,300 new settlement housing units in the occupied **West Bank** (A territory the Palestinians seek as part of a future state).

- The move appears to run contrary to the new government's pledge to put ideological considerations aside and reduce tensions with the Palestinians.

### Israel- Palestine conflict- Historical Background:

- The conflict has been ongoing for more than 100 years **between Jews and Arabs over a piece of land between Jordan River and the Mediterranean Sea.**
- It was between 1882 to 1948, when the Jews from around the world gathered in Palestine. This movement came to be known as
- Then in 1917, **Ottoman Empire** fell after World War 1 and the UK got control over Palestine.
- The land was inhabited by a Jewish minority and Arab majority.
- **The Balfour Declaration** was issued after Britain gained control with the aim of establishing a home for the Jews in Palestine. However during that period the Arabs were in majority in Palestine.
- Jews favored the idea while the Palestinians rejected it. Almost 6 million Jews lost their lives in **the Holocaust** which also ignited further demand of a separate Jewish state.
- Jews claimed Palestine to be their natural home while the Arabs too did not leave the land and claimed it.
- The international community supported the Jews.
- In 1947, **the UN voted for Palestine to be split into separate Jewish and Arab states, with Jerusalem becoming an international city.**
- That plan was accepted by Jewish leaders but rejected by the Arab side and never implemented.

#### **The creation of Israel and the ‘Catastrophe’:**

- It was in the year **1948 that Britain lifted its control over the area and Jews declared the creation of Israel.** Although Palestinians objected, Jews did not back out which led to an armed conflict.
- The neighboring Arabs also invaded and were thrashed by the Israeli troops. This made thousands of Palestinians flee their homes. This was called **Al-Nakba, or the “Catastrophe”.**
- Israel had gained maximum control over the territory after this came to an end.
- **Jordan** then went on a war with Israel and seized control over a part of the land which was called the West Bank, and Egypt occupied Gaza.
- **Jerusalem was divided between Israel in the West and Jordan in the East.** However, no formal peace agreement was signed, each side continued to blame each other for the tension and the region saw more wars.
- Israeli forces captured East Jerusalem and the West Bank, various areas of Syrian Golan Heights, Gaza and the Egyptian Sinai Peninsula in the year 1967.

#### **Present scenario:**

- Israel still occupies the West Bank, and although it pulled out of Gaza the UN still regards that piece of land as part of occupied territory.
- Israel claims the whole of Jerusalem as its capital, while the Palestinians claim East Jerusalem as the capital of a future Palestinian state.
- Tensions escalated in recent month over Israel's actions concerning Al-Asqa mosque in East Jerusalem.

### **Where is the West Bank?**

It is a **landlocked territory near the Mediterranean coast of Western Asia**, bordered by **Jordan to the east and by the Green Line separating it and Israel on the south, west and north**. The West Bank also **contains a significant section of the western Dead Sea shore**.

### **What are the disputed settlements here? Who lives there?**

- The West Bank was **captured by Jordan after the 1948 Arab-Israeli War**.
- Israel snatched it back during **the Six Day War of 1967**, and has occupied it ever since. During this war, the country defeated the combined forces of Egypt, Syria, and Jordan.
- It has built some 130 formal settlements in the West Bank, and a similar number of smaller, informal settlements have mushroomed over the last 20-25 years.
- **Over 4 lakh Israeli settlers** – many of them religious **Zionists** who claim a Biblical birthright over this land – now live here, along with some 26 lakh Palestinians.
- The territory is still a point of contention due to a large number of **Palestinians who live there and hope to see the land become a part of their future state**.
- When Israel took control of the land in 1967 it allowed Jewish people to move in, but **Palestinians consider the West Bank illegally occupied Palestinian land**.

### **Are these settlements illegal?**

The **United Nations General Assembly, the UN Security Council, and the International Court of Justice** have said that the West Bank settlements are violative of **the Fourth Geneva Convention**.

- Under the **Fourth Geneva Convention (1949)**, an occupying power “shall not deport or transfer parts of its own civilian population into the territory it occupies”.

Under the **Rome Statute** that set up the **International Criminal Court in 1998**, such transfers constitute war crimes, as does the “extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly”.

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

### **7. What is Adjusted gross revenue (AGR)?**

#### **Context:**

Bharti Airtel has decided to opt for the four-year moratorium on **adjusted gross revenue (AGR) and spectrum payments**, making it the second telco after Vodafone Idea to accept the offer, which was part of the recently announced **telecom relief package**.

#### **Background:**

The Union Cabinet had in September approved several measures to extend lifeline to the cash-strapped telecom sector, including a four-year moratorium on payment of dues to the government arising out of the AGR judgment as well as payments of spectrum purchased in past auctions.

- The government had asked the telecom companies to convey their decision on opting for the four-year dues moratorium by October 29, while also giving 90 days’ time to indicate if they wanted to opt for converting the interest amount pertaining to the moratorium period into equity.

#### **AGR**

Adjusted Gross Revenue (AGR) is the usage and licensing fee that telecom operators are charged by the Department of Telecommunications (DoT). It is divided into spectrum usage charges and licensing fees, pegged between 3-5 percent and 8 percent respectively.

- As per DoT, the charges are calculated based on all revenues earned by a telco – including non-telecom related sources such as deposit interests and asset sales.

### What was the relief package?

- Package includes a four-year moratorium on payment of statutory dues by telecom companies as well as allowing 100% FDI through the automatic route.
- The wide set of measures proposed entail reforms for the ailing sector by way of granting moratorium on unpaid dues, redefining **Adjusted Gross Revenue (AGR)** prospectively and cutting in Spectrum Usage Charges.

### How does the package help?

- It provided much needed relaxation to telecom companies Vodafone Idea, Reliance Jio and Bharti Airtel.
- These are expected to protect and generate employment opportunities, promote healthy competition, protect interests of consumers, infuse liquidity, encourage investment and reduce regulatory burden on **Telecom Service Providers (TSPs)**.
- A moratorium on AGR-related dues will offer space to the cash-strapped firm to improve its business and clear dues over a longer period.
- The definition of AGR has been changed to exclude non-telecom revenue. All non-telecom revenue will be removed from AGR.

Let's understand this in three simple steps:

1. It started by and large with the differing legal interpretation of AGR. To understand this, one must go back to 1999, when the government decided to shift from a fixed to a revenue-sharing model for the telecom sector. Telecom players would pay a certain percentage of their AGR, earned from telecom and non-telecom revenues, as licence and spectrum fee.
2. In 2003, the Department of Telecom (DoT) raised the demand for AGR payments. It said all revenue earned by telcos as dividend from subsidiaries, interest on short-term investments, money deducted as trader discounts, discount for calls and others, which was over and above the revenue from telecom services, would be included for calculation of AGR.
3. The telcos approached **the Telecom Disputes Settlement Appellate Tribunal (TDSAT)**, which in July 2006 ruled the matter must be sent back to the

regulator TRAI for fresh consultation. TDSAT rejected the government's contention, and the Centre moved the Supreme Court. While the case was still ongoing, in 2012, the Supreme Court cancelled 122 telecom licences in the 2G scam case. This prompted a revamp, with spectrum now allocated through auctions.

### What was the Supreme Court verdict?

In 2019, the Supreme Court gave the first verdict in the case, holding that DoT's definition of AGR was the correct one, and that the telcos must pay the AGR, interest and penalty on non-payment.

### 8. WMO report on CO2 emissions:

#### In News :

The World Meteorological Organisation (WMO) has recently released a report on CO2 emissions.

#### Key findings:

1. The **increase in CO2 from 2019 to 2020 was slightly lower than that observed from 2018 to 2019** but higher than the average annual growth rate over the past decade.
2. This is despite the approximately 5.6% drop in fossil fuel CO2 emissions in 2020 due to restrictions related to the pandemic.
3. **For methane**, the increase from 2019 to 2020 was higher than that observed from 2018 to 2019 and also higher than the average annual growth rate over the past decade.
4. **For nitrous oxides**, the increase was higher and also than the average annual growth rate over the past 10 years.
5. **Concentration of carbon dioxide (CO2)**, the most significant greenhouse gas, reached 413.2 parts per million in 2020 and is 149% of the pre-industrial level. Methane (CH4) is 262% and nitrous oxide (N2O) is 123% of the levels in 1,750 when human activities started disrupting earth's natural equilibrium.
6. Roughly **half of the CO2 emitted by human activities today remains in the atmosphere**. The other half is taken up by oceans and land ecosystems.

7. From 1990 to 2020, radiative forcing – the warming effect on our climate – by long-lived greenhouse gases increased by 47%, with CO<sub>2</sub> accounting for about 80% of this increase.

### Concerns:

- The ability of land ecosystems and oceans to act as ‘sinks’ may become less effective in future, thus reducing their ability to absorb CO<sub>2</sub> and act as a buffer against larger temperature increase.
- At the current rate of increase in greenhouse gas concentrations, we will see a temperature increase by the end of this century far in excess of the Paris Agreement targets of 1.5 to 2 degrees Celsius above pre-industrial levels.

### About WMO:

- The World Meteorological Organization (WMO) is a **specialized agency of the United Nations** dedicated to meteorology (weather), climatology (climate), operational hydrology (water) and other related geophysical sciences such as oceanography and atmospheric chemistry.
- Predecessor organization – International Meteorological Organization (IMO) – founded in 1873.

### Reports:

1. Greenhouse Gas Bulletin.
2. Status of the World Climate.

### What does WMO do?

1. WMO coordinates the activities of National Meteorological and Hydrological Services in 191 States and Territories so that basic weather, climate and water services are made available to anyone who needs them, when they need them.
2. WMO guarantees the publication of observations and statistics and furthers the application of meteorology and hydrology (including the monitoring and

predictions of climate change and ozone) to all aspects of human activities such as aviation, shipping, water management and agriculture.

3. WMO also encourages research and training in meteorology and hydrology and their related applications and contributes towards reducing the impact of weather- and climate-related hazards. This is accomplished through regular, reliable forecasts and early warnings on flooding, drought, tropical cyclones, tornadoes and other extreme events.
4. Predictions concerning locust swarms and the transport of pollutants (nuclear and toxic substances, volcanic ash) are also provided by WMO Members."

## THE INDIAN EXPRESS

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

#### 1. Anti-diabetic medicines get price caps

**Context** Drug price regulator National Pharmaceutical Pricing Authority (NPPA) has fixed the ceiling prices for 12 anti-diabetic generic medicines, including glimepiride tablets, glucose injection and intermediate acting insulin solution to make it possible for every Indian to afford medical treatment.

#### About The National Pharmaceutical Pricing Authority (NPPA)

- It is a government regulatory agency that controls the prices of pharmaceutical drugs in India.
- It was constituted in 1997 as an attached office of the Department of Pharmaceuticals (DoP),
- **Ministry:** Ministry of Chemicals and Fertilizers

#### What is diabetes?

- Diabetes is a Non-Communicable Disease (NCD) that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin it produces.
- **Type I diabetes:** It mostly affects children of age 14-16 years. This type occurs when the body fails to produce sufficient insulin. They must take artificial insulin daily to stay alive.



- **Type 2 diabetes:** While the body still makes insulin, unlike in type I, the cells in the body do not respond to it as effectively as they once did. The population with 45 and above age group is the most affected with it.
  - This is the most common type of diabetes and it has strong links with obesity.
- **Diabetes affects the five major organs** – Kidney, Heart, Blood vessels, Nervous System, and Eyes (retina).
- **Responsible factors:** Unhealthy diet, lack of physical activity, harmful use of alcohol, overweight/obesity, tobacco use, etc.

## 2. NIPUN Bharat Mission

**In News:** Government sets up National Steering Committee for implementation of the National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) Bharat Mission

- **By:** The Department of School Education and Literacy
- **Aim:** To achieve the goal of universal proficiency in foundational literacy and numeracy for every child by grade 3, as envisaged by National Education Policy 2020.

Responsibilities-

- To oversee the progress of National Mission on Foundational Literacy and Numeracy and provide guidance on policy issues.
- To arrive at the target to be achieved nationally in 2026-27.
- To disseminate tools for measurement of yearly progress in the form of guidelines.
- To prepare and approve a National Action Plan (based on the State's Action Plans) with KRAs for every State/UT vis-à-vis factors attributable for the gaps (i.e., lack of Fund, Vacancies, Teachers, Demography, Local issues, Need of Training for teachers, Curriculum & pedagogy related).
- To review programmatic and financial norms periodically to ensure they are synchronised with targets to be achieved.
- To develop methodology of assessment to analyse the progress and provide feedback to States/UTs.

## 3. Fisherman Crisis: India- Sri Lanka

**Context:** A fisherman from Tamil Nadu reportedly died after falling into the sea when his boat collided with a Sri Lankan naval vessel. Two other fishermen on the

boat were detained by Sri Lankan naval personnel on the charge of crossing the International Maritime Boundary Line (IMBL).

- Tamil Nadu fishermen's associations have accused the Sri Lankan Navy of brutally attacking the fisherman which led to his drowning & death, while Sri Lanka has denied the allegations.

### **What is the reason for conflict between Indian Fishermen & Sri Lankan Navy?**

- Indian boats have been fishing in the troubled waters for centuries and had a free run of the Bay of Bengal, Palk Bay and the Gulf of Mannar **until 1974 and 1976** when treaties were signed between the two countries to demarcate International Maritime Boundary Line (IMBL).
- Indian Fishermen often risk their lives and cross the IMBL for better fish catch, but the Sri Lankan Navy is on alert, and have either arrested or destroyed fishing nets and vessels of those who have crossed the line.

### **Unresolved Conflict**

- The problem has existed for more than a decade now, from the time Sri Lanka's 30 year-long civil war ended in 2009.
- That was when the Sri Lankan northern Tamil fishermen, who were displaced and barred access to the sea, began returning to their old homes & started to engage in fishing for their livelihood.
- This has spurred a **competition between Indian & Sri Lankan fishermen** for marine resources with Sri Lankan Navy safeguarding their waters & marine resources.
- In Tamil Nadu, daily wage fishermen's income depends on the catch they bring back. Using the **bottom trawling fishing** method, they drag large fishing nets along the seabed, scooping out a huge quantity of prawns, small fishes and virtually everything else at one go.
- Constant bottom trawling along the coast of Tamil Nadu over the years has meant that the fishermen are **drawn to the relatively resource-rich Sri Lankan waters**. Indian fishermen therefore take their mechanised trawlers further away from Indian waters often crossing IMBL & illegally entering into Sri Lankan waters.
- The relentless trawling by Indian vessels has caused **huge losses to northern Sri Lankan fishermen**. Their catch has fallen drastically and they count vanishing varieties of fish.
- The Sri Lankan state's response to the problem has been largely a **military and legal one**, tasking its Navy with patrolling the seas and arresting "encroachers", banning trawling (as it is ecologically destructive), and

levying stiff fines on foreign (Indian) vessels engaged in illegal fishing in its territorial waters.

- At the heart of the conflict is a tale of **competing livelihoods** in a narrow stretch of the sea, amid a looming environmental threat, and a glaring asymmetry of power – be it in numbers, equipment, or political backing – between two Tamil-speaking fishing communities.

### **Has there been an attempt at arriving at a solution?**

- India and Sri Lanka have held many rounds of bilateral talks in the last decade between government officials as well as fisher leaders.
- The outcomes have mostly ranged from deadlocks, with Tamil Nadu refusing to give up bottom trawling, with India seeking a “humanitarian response” from Sri Lanka and Sri Lankan authorities adopting legal & military means to solve the problem.
- The Indian government’s attempt to divert fishermen to deep sea fishing has not taken off as was envisaged.

### **Way Ahead**

- As the first step, Tamil Nadu must consider a moratorium on bottom trawling in the Palk Strait.
- Such a move must be accompanied by both India & Sri Lanka substantially supporting their respective fishing communities to cope with the suspension of trawling on the Tamil Nadu side and the devastating impact of the pandemic on both sides. The time must be used for evolving a lasting solution.

## **4. Greening of Polar ice**

**In News:** The 2021 United Nations Climate Change Conference, also known as COP26, is the 26th United Nations Climate Change conference. It is scheduled to be held in the city of Glasgow, Scotland, between 31 October and 12 November 2021, under the co-presidency of the United Kingdom and Italy.

### **Greening of polar ice**

Climate change affects the polar ice caps that are the thermostats of the planet with their high albedo. Albedo of a surface is the fraction of sunlight it reflects back. Greening will convert the ‘net reflective’ ice caps to ‘net absorptive’, tampering with the global energy balance and accelerate polar ice melting.

For the past several decades, the Arctic has been warming twice as quickly as the rest of the world and undergoing tremendous transformation. Arctic Sea ice reduced by around 39 per cent in the last 38 years. Over the same period, ice in Antarctica also reduced by 6.2 per cent.

Researchers have observed **extensive greening** around Alaska and Canada, which were snow-covered lands.

- This is occurring because Arctic summers are getting warmer every decade and this can be clearly explained by the positive feedback loop.
- Sea ice has a bright surface – about 80 per cent of the sunlight that strikes it is reflected into space. The sea ice melts and exposes the deep, dark ocean water because of rising temperatures.
- Now, instead of reflecting 80 per cent of the sunlight, the ocean absorbs 90 per cent of the solar radiation. The seawater heats up and Arctic temperatures rise further, amplifying the rate of warming.
- The region, as a result, turns greener with the habitable climate provided by warmer air and soil temperatures. Rapidly rising temperatures in the Arctic have led to longer growing seasons and shifting soils for the plants.
- Scientists have observed the grassy tundra transitioning to scrublands and shrubs becoming larger and denser. The Arctic faced several other adverse impacts in its zone because of climate-induced greening.

### What about Antarctica?

The Antarctic is also equally greening because of the irreversible melting of sea ice, which is green in colour.

- In 2016, it was discovered that marine ice has 500 times more iron than the ice above it. This iron comes from the rocks under the Antarctic ice sheet which, when glaciers pass over them, are ground into a fine powder.
- The ice-bound iron oxidizes in contact with seawater.
- The resulting iron oxide particles take on a green hue as light scatters through them. The green ice only becomes visible when an iceberg capsizes and flips over from excessive melting and is disjointed from the main body.

### Conclusion

Rapidly melting permafrost in the poles is also releasing trapped greenhouse gases like methane into the atmosphere. Thawing of permafrost is releasing ancient methane in places like Siberia, which can turn the coldest place on earth into a temperate zone.

The IPCC report says that the world must also deliver rapid and drastic reductions in methane emissions, in addition to slashing carbon dioxide emissions, to mitigate the climate crisis.

- Rather than looking at profitable goals, we should try to focus on the shift to sustainable standards of development in the economies. In this period, instead of rushing into business as usual, the primary investments that are to be made by these world leaders ought to be climate-conscious to determine a low-carbon future.
- The effects of climate change (greening of the poles) are transboundary in nature. Thus, the only solution could be integrated international negotiations and frameworks. These are required to set standards for nations and businesses to achieve global average temperature standards at the earliest, before the warming crosses the tipping point.

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

### 5. What is White Dwarf?

Using the Hubble Space telescope and Transiting Exoplanet Survey Satellite (TESS), astronomers have identified several white dwarfs over the years.

#### Where is this white dwarf?

- A white dwarf is what **stars** like the Sun become after they have **exhausted their nuclear fuel**.
- Near the **end of its nuclear burning stage**, this type of star expels most of its outer material, creating a planetary nebula.
- Only the **hot core of the star remains**. This core becomes a very hot white dwarf, with a temperature exceeding 100,000 Kelvin.
- Unless it is **accreting matter from a nearby star**, the white dwarf cools down over the next billion years or so.

#### Limits for white dwarf

- White Dwarf is **half the size of our Sun** and has a **surface gravity 100,000 times** that of Earth.
- There is a **limit on the amount of mass** a white dwarf can have.

- Subrahmanyan Chandrasekhar discovered this limit to be **4 times the mass of the Sun**. This is appropriately known as the “**Chandrasekhar Limit**.”

### Observing white dwarf

- Many nearby, young white dwarfs have been detected as sources of soft, or lower-energy, X-rays.
- Recently, soft X-ray and extreme ultraviolet observations have become a powerful tool in the study the composition and structure of the thin atmosphere of these stars.

### What is TESS?

- The researchers observed this phenomenon using Transiting Exoplanet Survey Satellite (TESS).
- TESS is a space telescope in **NASA’s Explorer program**, designed to search for extrasolar planets using the transit method.
- The primary mission objective for TESS is to survey the brightest stars near the Earth for transiting exoplanets over a two-year period.
- The TESS project will use an array of wide-field cameras to perform an all-sky survey. It will scan nearby stars for exoplanets.

### How does white dwarf ‘switch on and off’?

- In these types of systems, the donor star orbit around the white dwarf keeps feeding the accretion disk.
- As the accretion disk material slowly sinks closer towards the white dwarf it generally becomes brighter.
- It is known that in some systems the donor stars stop feeding the disk.

## 6. GoI Floating Rate Bonds

The Government of India has announced the Sale (Re-issue) of Floating Rate Bonds, 2028’.

### What are Bonds?

- Bonds are investment securities where an **investor lends money to a company or a government** for a set period of time, in exchange for regular interest payments.
- Generally, bonds come with a **fixed coupon or interest rate**. For example, you can buy a bond of Rs 10,000 with a coupon rate of 5%.

- Once the bond reaches maturity, the bond issuer returns the investor's money.
- **Fixed income** is a term often used to describe bonds, since your investment earns fixed payments over the life of the bond.

### Why are bonds launched?

- Companies sell bonds **to finance ongoing operations**, new projects or acquisitions.
- Governments sell bonds **for funding purposes**, and also to supplement revenue from taxes.

### What are Floating Rate Bonds?

- A floating rate bond is a debt instrument that **does not have a fixed coupon rate**, but its interest rate fluctuates based on the **benchmark** the bond is drawn.
- Benchmarks are market instruments that influence the overall economy.
- For example, repo rate or reverse repo rate can be set as benchmarks for a floating rate bond.

### How do floating rate bonds work?

- Floating rate bonds make up a significant part of the Indian bond market and are majorly issued by the government.
- For example, the RBI issued a floating rate bond in 2020 with interest payable every six months. After six months, the interest rate is re-fixed by the RBI.

**Prelims Practice Questions**

**1. Consider the following statements regarding the Uighur Muslims:**

1. The largest population of the Uighur ethnic community lives in Kyrgyzstan.
2. India has strongly condemned the brutalities against the Uighurs.

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 : D

Explanation

- The **Uighurs** are a predominantly Muslim minority Turkic ethnic group, whose origins can be traced to Central and East Asia.
  - The Uighurs are considered to be one of the 55 officially recognized ethnic minority communities in China.
  - However, China recognises the community only as a regional minority and rejects that they are an indigenous group.
- Currently, **the largest population of the Uighur ethnic community lives in the Xinjiang region of China. Hence, statement 1 is not correct.**
  - A significant population of Uighurs also lives in the neighbouring Central Asian countries such as Uzbekistan, Kyrgyzstan and Kazakhstan.
- **China's Stand on Uighur Crisis:** China has long denied accusations of ethnic cleansing. It also denounced the declaration and termed it as a plot to hurt China's image.
  - China claims its camps to be 'educational centres' where the Uighurs are being cured of "extremist thoughts" and radicalisation, and learning vocational skills. However, in actuality, they are brutal incarceration camps.
- **India's Stand:** The Indian government **has maintained near silence** on the Uighur crisis. **Hence, statement 2 is not correct.**

**2. With reference to Asian Infrastructure Investment Bank (AIIB), consider the following statements:**



1. AIIB has more than 80 member nations.
2. India is the largest shareholder in AIIB.
3. AIIB does not have any members from outside Asia.

**Which of the statements given above is/are correct?**

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

**Answer: a**

**Explanation:**

- The Asian Infrastructure Investment Bank (AIIB) is a multilateral development bank with a mission to improve social and economic outcomes in Asia.
- India is the second-largest shareholder in AIIB, with China being the largest shareholder.
- AIIB is headquartered in Beijing. The membership has grown to 97 approved members worldwide. It includes member nations outside of Asia as well. Example: Australia, New Zealand.

**3. Consider the following statements regarding the International Solar Alliance (ISA):**

1. ISA is the nodal agency for implementing One Sun One World One Grid (OSOWOG).
2. The new Hydrogen initiative was launched at the fourth general assembly of the ISA.

**Which of the statements given above is/are correct?**

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

Answer :C

Explanation

- Recently, the **fourth general assembly** of the **International Solar Alliance (ISA)** was held.
  - A total of 108 countries participated in the assembly, including 74 member countries, 34 observer and prospective countries, 23 partner organisations and 33 special invitee organisations.
- The ISA is an intergovernmental treaty-based organisation with a global mandate to catalyse solar growth by helping to reduce the cost of financing and technology.
  - ISA, co-founded by India and France during the 2015 climate change conference in Paris has assumed centre-stage for India' attempts at a global climate leadership role.
- ISA is the **nodal agency for implementing One Sun One World One Grid (OSOWOG)**, which seeks to transfer solar power generated in one region to feed the electricity demands of others. **Hence, statement 1 is correct.**
- NISE is an autonomous institution of the Ministry of New and Renewable (MNRE) and is the apex National R&D institution in the field of Solar Energy.
- New ISA programmes launched on management of solar PV panels & battery usage waste and solar hydrogen programme.
- The new **Hydrogen initiative** is aimed at **enabling the use of solar electricity to produce hydrogen** at a more affordable rate than what is available currently (USD 5 per KG), by bringing it down to USD 2 per KG. **Hence, statement 2 is correct.**

**4 Consider the following statements with regards to the GIFT city:**

1. It is located in Gujarat's Gandhinagar.
2. It is a greenfield project.
3. It would only have commercial areas and no residential facilities.

**Which of these statements are correct?**

- a. 1 & 2 only
- b. 2 & 3 only
- c. 1 & 3 only
- d. All of the above

**Answer: a**

**Explanation:**

- Gujarat International Finance Tec-City (GIFT City) is an under-construction central business district in Gandhinagar in Gujarat, India.
- It is India's first operational greenfield smart city and international financial services centre, which the Government of Gujarat promoted as a greenfield project.
- The city includes commercial, financial and residential complexes.

**5. Consider the following statements:**

1. India was the world's top rice exporter in the year 2020.
2. Majority of India's basmati rice goes to African countries.
3. Golden rice is the best naturally grown variety of basmati rice.

Which of the statements given above is/are correct?

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

Answer : A

Explanation

- **India is the world's top rice exporter, earning Rs. 65,000 crore in 2020** by selling 18 million tonnes of grain (organic rice), about a quarter of which is premium basmati. **Hence, statement 1 is correct.**
  - Among the 75 countries which buy Indian rice, **West Asian nations, the US and the U.K. are the biggest importers of basmati**, while the majority of **non-basmati goes to African countries** and neighbours Nepal and Bangladesh. **Hence, statement 2 is not correct.**
- Recently, according to the Coalition for GM Free India, the discovery of 500 tonnes of Genetically Modified (GM) rice in a consignment that India exported to the European Union countries in June 2021 has led to the "loss of reputation of India and its agricultural market".
  - However, India pointed out that GM rice is not grown commercially in India, let alone exported.
  - India has approved commercial cultivation of only one GM crop, Bt cotton and no GM food crop (including GM Rice) has ever been approved for commercial cultivation in the country.

- Probably the **best known variety of GM rice is golden rice. Hence, statement 3 is not correct.**
  - Golden rice involves the insertion of genes from a plant -- both daffodils and maize have been used -- and a soil bacterium to create a grain that is enriched with Vitamin A.

**6. India has approved commercial cultivation of which of the following Genetically Modified (GM) crops?**

1. Bt cotton
2. Golden rice
3. HtBt cotton
4. Bt brinjal

Select the correct answer using the code given below:

- A 1 and 2 only
- B 2 and 4 only
- C 1 only
- D 1, 3 and 4

Answer : C

Explanation

- **Genetically Modified (GM)** crops are derived from plants whose genes are artificially modified, usually by inserting genetic material from another organism, in order to give it a new property, such as increased yield, tolerance to a herbicide, resistance to disease or drought, or to improve its nutritional value.
- Probably the best known variety of GM rice is golden rice.
  - Golden rice involves the insertion of genes from a plant -- both daffodils and maize have been used -- and a soil bacterium to create a grain that is enriched with Vitamin A.
- **India has approved commercial cultivation of only one GM crop, Bt cotton.**
  - **No GM food crop has ever been approved for commercial cultivation in the country.**
  - However, confined field trials have been allowed for at least 20 GM crops.
  - India has drafted policies to ban GM rice trials in the basmati belt.

- Also, unauthorised HtBt Cotton and Bt Brinjal are already being grown commercially, with hundreds of growers blatantly defying the governmental ban.
- Hence, option C is correct.

### **Mains Practice Questions**

**1Q. Discuss the term heat budget and how it impacts the temperature in the earth's atmosphere.**

#### **Approach**

- Start the answer by defining what is the heat budget of the earth.
- Discuss the mechanism of the heat budget with a suitable diagram and how it impacts the temperature of the earth.
- Conclude Suitably.

**2Q. Examine the potential of PM Kisan Yojana along with its shortcomings. Also compare it with other direct cash transfer schemes being implemented by State governments. (250 words)**

#### **Approach**

- Write a brief about the PM-Kisan scheme in the introduction part.
- Discuss its potential and shortcomings.
- Compare it with other direct cash transfer schemes of State governments.