



## One Year of Taliban 2.0

**For Prelims:** Afghanistan, Taliban, Location of Afghanistan

**For Mains:** India and its Neighbourhood, Effect of Policies & Politics of Countries on India's Interests, Crisis in Afghanistan and its Implications

### Why in News?

It has been a year since **American Troops withdrew** and [Taliban took over the regime in Afghanistan in August 2021](#).

- Over the last two decades, **foreign powers including India** helped Afghanistan to rebuild roads, dams, government offices, hospitals, rural infrastructure, the economy, and education.

### How did the Taliban Take Over the Regime in Afghanistan?



- About Taliban:**

- The Taliban**, or students in the Pashto language, **emerged in the early 1990s in northern Pakistan** following the **withdrawal of Soviet troops from Afghanistan**.
- It is an **Islamic fundamentalist political and military organisation** operating in Afghanistan. They have dominated Afghan polity for quite some time and feature regularly in international affairs.
- The Taliban have been fighting against the U.S.-backed government in Kabul for around 20

years. They seek to **reimpose their strict version of Islam in Afghanistan.**

▪ **Background:**

◦ **Terrorist Attack:**

- **On 11<sup>th</sup> September 2001**, terrorist attacks in America killed nearly 3,000 people.
- A month after 9/11, the **US launched airstrikes against Afghanistan (Operation Enduring Freedom).**

◦ **Transitional Government in Afghanistan:**

- After the attacks, the [North Atlantic Treaty Organization \(NATO\)](#) coalition troops **declared war on Afghanistan.**
  - The US dislodged the Taliban regime and **established a transitional government in Afghanistan.**
- The US had reached the conclusion long ago that the **war was unwinnable and approached for peace talks.**

◦ **Peace Talks:**

• **[Murree Talks:](#)**

- In 2015 the US had sent a representative to the first-ever meeting between the Taliban and the Afghan government that was hosted by Pakistan in Murree in 2015.

• **[Doha Talks:](#)**

- In 2020, before the Doha Talks started, the **Taliban had maintained that they would hold direct talks only with the US**, and not with the Kabul government, which they did not recognise.
- In the agreement, the **US administration promised that it would withdraw all American troops from Afghanistan by 1st May, 2021.**
- The deadline has been pushed to **11<sup>th</sup> September 2021.**

◦ **US Exit:**

- By July 2021, the US claimed that it had withdrawn 90% of the troops and Taliban claimed that it had controlled over 85% of the Afghan Territory.

◦ **Taliban Takeover:**

- Taliban **took control of the regime in Afghanistan in August 2021.**
- This was the first time since their ouster 20 years ago in the wake of the 9/11 strikes that Taliban fighters had entered the city — they first seized the Capital in 1996.

## How is Current Situation in Afghanistan under Taliban's Rule?

▪ **Overview:**

- The Taliban took over a **readymade country**, but administering a nation of 32 million requires capacity and finances.
  - The Taliban are short on both.
- Many wealthy people, and those of the middle class with means and education, including civil servants, **have fled the country**, not wishing to be part of the Taliban regime.
- **The international community** has not yet recognised the regime formally, and **sanctions, including travel bans on many Taliban, remain in place.**
  - Their access to **international banking and finance** is limited.

▪ **Economy:**

- In May 2022, the Taliban presented an **annual budget based entirely on domestic revenue.**
  - It projected an **expenditure of USD 2.6 billion**, and a **revenue of USD 2.1 billion.**
  - **No details were given about spending**, or how the gap with revenue would be bridged.
- Most of Afghanistan's revenues are **now being raised through customs duties.**
  - It is also **exporting coal to Pakistan.**
- **[The United Nations](#)** humanitarian response has helped Afghanistan keep its head above water.
  - Until the Taliban banned high school education for girls, **the UN was paying teachers' salaries.**
- **[The International Committee of the Red Cross \(ICRC\)](#)** is financing the Indira Gandhi

Children's Hospital in Kabul.

- In the absence of international banking facilities, UN planes have flown in USD 1 billion in hard cash, including to fund money transfers to the needy through partner agencies.

▪ **Security:**

- Taliban remains nervous about the **Daesh or ISKP (Islamic State Khorasan province)**, which has carried out attacks in Kabul with frightening regularity.
  - According to the UN, from mid-August 2021 to mid-June 2022, **2,106 people were killed or wounded — 700 were killed — in violence attributed to or claimed by ISKP.**
- The **killing of al-Qaeda leader Ayman al-Zawahiri** in a Kabul neighbourhood by the US **has added to the Taliban's insecurity.**

▪ **Afghan Population & Taliban:**

- Though there hasn't been much change in the Taliban's attitude towards civil society from the time they last ruled in Kabul, **but unlike 20 years ago, outright brutalities have not been reported yet.**
  - **A dress code has been prescribed** for both men and women, but it is not strictly implemented.
- **The anti-people action** by the Taliban to **ban the education of girls beyond class 6 in school**, and to **make it difficult for women to work** met with **protest by women** demanding **"Education, Employment and Bread"**.
  - It was **dispersed by guards who fired in the air.**
- The UN has reported **160 extrajudicial killings, 178 arbitrary detentions, 23 instances of incommunicado detentions, and 56 instances of torture and ill-treatment** of former government and military officials.
- Reports of **factionalism**, and the reported dissonance between the **Haqqanis and the Kandahar core** of the Taliban have fueled **speculation about the possibility of a breakdown and another cycle of civil war.**

## How has India approached Afghanistan since the Taliban Regime?

- After the Taliban takeover, India is caught in the **middle of this dilemma divided between restoring Afghanistan** as a strategic priority in its policy and the **practical hurdles on the ground.**
- Currently, India is assessing **three broad ways of potential engagement with Afghanistan:**
  - Providing humanitarian assistance.
  - Exploring a joint **counterterrorism** effort with other partners.
  - Engaging in talks with the Taliban.
  - The end goal of all these is to **restore people-to-people links** and prevent **backsliding of the gains Delhi's developmental aid has made** in Afghanistan in the past two decades.
- India has undertaken **more than 400 key infrastructure projects** in all 34 Afghan provinces and has signed **strategic agreements to enhance trade and bilateral relations.**
  - From 2002 to 2021, **India spent \$4 bn in development assistance in Afghanistan**, building **high-visibility projects** such as highways, hospitals, the parliament building, rural schools, and electricity transmission lines.
    - These projects have created a **vast and deep pool of goodwill for India** of the kind that no other country can claim.
    - One of the projects that was **left incomplete was the Shahtoot Dam**, to provide drinking water to 2 million residents of Kabul.

## What is the Significance of Afghanistan for India?

▪ **Economic and Strategic Interest:**

- Afghanistan is a gateway to the **oil and mineral-rich Central Asian republics.**
- Afghanistan's main advantage is its **geography**, as anyone who is in power in Afghanistan **controls the land routes connecting India with Central Asia** (via Afghanistan).
- Located at the **heart of the historic Silk Road**, Afghanistan was long the **crossroads of commerce between Asian countries** connecting them to Europe, and enhancing **religious, cultural, and commercial contacts.**

▪ **Developmental Projects:**

- The massive **reconstruction plans for the country** to offer a lot of opportunities for Indian companies.
- Three major projects:
  - The **Afghan Parliament**, the **Zaranj-Delaram Highway**, and the **Afghanistan-India Friendship Dam (Salma Dam)**, along with India's assistance of **more than USD 3 billion in projects**, hundreds of small development projects (of schools, hospitals and water projects) **have cemented India's position in Afghanistan.**

▪ **Security Interest:**

- India has been the **victim of state-sponsored terrorism** emanating from Pakistan supported terrorist group operating in the region (e.g., Haqqani network). **Thus, India has two priorities in Afghanistan:**
  - To prevent Pakistan from setting up a friendly government in Afghanistan, and
  - To avoid the return of jihadi groups, like al Qaeda, which could strike in India.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### Prelims

**Q. Consider the following countries: (2022)**

1. Azerbaijan
2. Kyrgyzstan
3. Tajikistan
4. Turkmenistan
5. Uzbekistan

**Which of the above have borders with Afghanistan?**

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

**Ans: (c)**

### Mains

**Q.** The proposed withdrawal of International Security Assistance Force (ISAF) from Afghanistan in 2014 is fraught with major security implications for the countries of the region. Examine in light of the fact that India is faced with a plethora of challenges and needs to safeguard its own strategic interests. **(2013)**

**Source: IE**

## Benami Transactions Act

**For Prelims:** Benami Property, Benami Transaction, Benamidar, Money Laundering

**For Mains:** Provisions for Benami Transaction (Prohibition) Amendment Act 2016, Unconstitutional Provisions

## Why in News?

Recently, [The Supreme Court of India](#) held that Section 3(2) of the [Benami Transactions \(Prohibition\) Act 1988](#) as unconstitutional on the grounds of being manifestly arbitrary.

- Section 3(2) prescribes the punishment for entering into benami transaction.
- The judges held that the Act which **was amended in 2016** can only be applied prospectively and **quashed all prosecutions or confiscation proceedings before the amended Act came into force.**

## What did The Supreme Court Ruled?

- **Section 3(3) of 2016 Act:**
  - It **extended the three-year imprisonment to seven years and fine of up to 25% of the fair market value of the property**, if a person enters into any benami transactions.
  - **The Supreme Court ruled that “Concerned authorities cannot initiate or continue criminal prosecution or confiscation proceedings for transactions entered into prior to the coming into force of the 2016 Act (25<sup>th</sup> October 2016). As a consequence of the above declaration, all such prosecutions or confiscation proceedings shall stand quashed”.**
- **Forfeiture of Benami Properties:**
  - The Supreme Court also held the **provision in the 1988 Act** regarding forfeiture of benami properties as **unconstitutional**, and added that the provision in the **2016 amended Act on the same can only be applied prospectively.**
    - **As it is not concerned with the constitutionality of independent forfeiture proceedings** contemplated under the **2016 Amendment Act** on the other grounds, it was leaving open the question to be decided in appropriate cases.
- **Prevention of Money Laundering Act (PMLA), 2002:**
  - A recent judgement of the Supreme Court upheld the provision of [PMLA](#) which allows authorities to **take possession of property before trial in exceptional cases.**
  - **The Supreme Court has said that such provision leaves the scope for arbitrary application.**

## What do we know about the Benami Transactions (Prohibition) Amendment Act 2016?

- **About:**
  - The Act amended the Original Act (Benami Transaction (Prohibition) Act 1988) and renamed it as **Prohibition of Benami Property Transaction Act, 1988.**
  - **The Act defines a benami transaction as a transaction where:**
    - a property is **held by or transferred to a person**, but has **been provided for or paid by another person.**
    - the transaction is made in a **fictitious name**
    - the **owner is not aware of denies knowledge of the ownership** of the property,
    - the person providing the consideration for the property is **not traceable.**
- **Appellate Tribunal:**
  - The Act provides for an [Appellate Tribunal](#) to hear appeals against any orders **passed by the Adjudicating Authority.**
    - Appeals against the orders of the Appellate Tribunal **will lie to the high court.**
  - The special court should **conclude the trial within six months** from the date of filing of the complaint.
- **Authorities:**
  - The Act **established four authorities to conduct inquiries or investigations** regarding benami transactions:



- **Initiating Officer**
- **Approving Authority**
- **Administrator**
- **Adjudicating Authority**
- If an Initiating Officer believes that a **person is a benamidar**, he may **issue a notice to that person**.
  - The Initiating Officer may hold the **property for 90 days** from the date of issue of the notice, subject to permission from the Approving Authority.
    - At the end of the notice period, the **Initiating Officer may pass an order to continue holding the property**.
- If an order is passed to continue holding the property, **the Initiating Officer will refer the case to the Adjudicating Authority**.
  - The Adjudicating Authority will examine all documents and evidence relating to the matter and then **pass an order on whether or not to hold the property as benami**.
    - **Based on an order to confiscate the Benami property**, the Administrator will receive and manage the property in a manner and subject to conditions as prescribed.
- The amended law empowers the specified authorities **to provisionally attach benami properties which can eventually be confiscated**.
- **Penalty:**
  - If a person is found **guilty of the offence of the Benami transaction** by the competent court, he shall be punishable with **rigorous imprisonment for a term not less than one year** but which may **extend to 7 years**.
  - He shall also be liable to a fine which may **extend to 25% of the fair market value of the property**.

## What are some Important Terms under the Act?

- **Property:**
  - **Assets of any kind**, whether movable or immovable, tangible or intangible, corporeal or incorporeal and includes any right or interest or legal documents or instruments evidencing title to or interest in the property and where the property is capable of conversion into some other form, then the property in the converted form and also includes the proceeds from the property.
- **Benami Property:**
  - Any property **which is the subject matter of a Benami Transaction** and also includes the **proceeds from such property**.
- **Benamidar:**
  - A person or a fictitious person as the case may be, **in whose name the Benami Property is transferred or held and includes a person who lends his name**.
- **Beneficial Owner:**
  - A person, whether his identity is known or not, **for whose benefit the Benami Property is held by a Benamidar**.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

**Q. With reference to the 'Prohibition of Benami Property Transactions Act, 1988 (PBPT Act)', consider the following statements: (2017)**

1. A property transaction is not treated as a benami transaction if the owner of the property is not aware of the transaction.
2. Properties held benami are liable for confiscation by the Government.
3. The Act provides for three authorities for investigations but does not provide for any appellate mechanism.

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

- (a) 1 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 2 and 3 only

**Ans: (b)**

**Explanation:**

- **Benami Property Transaction Act, 1988 (PBPT Act):**
  - The definition of a benami transaction has been widened to include a transaction made in a fictitious name, where the owner is not aware or denies knowledge of the ownership of the property or the person providing the consideration for the property is not traceable. **Hence, statement 1 is not correct.**
  - It provided for a Property of benami liable to acquisition or confiscation. **Hence, statement 2 is correct.**
  - Also, it provided for an appellate mechanism under the PBPT Act in the form of Adjudicating Authority and Appellate Tribunal. **Hence, statement 3 is not correct.**
- However, with a view to providing an effective regime for prohibition of benami transactions, the said Act was amended through the Benami Transactions (Prohibition) Amended Act, 2016.
- **Therefore, option (b) is the correct answer.**

**Source: IE**

## **PEN-PLUS Strategy Against Non-Communicable Diseases**

**For Prelims:** PEN-PLUS Strategy, non-communicable diseases (NCD), World Health Organisation (WHO), 'disability-adjusted life years' (DALYs), National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke (NPCDCS), National Health Mission (NHM), Accredited Social Health Activist (ASHA), mDiabetes, mCessation.

**For Mains:** Impacts of Non-Communicable Disease.

### **Why in News?**

Recently, Africa has adopted a new strategy called **PEN-PLUS Strategy** to boost access to the diagnosis, treatment and care of severe **Non-Communicable Diseases (NCD)**.

### **What is Pen Plus Strategy?**

- It's a **regional strategy to address severe Non-Communicable Diseases at First-Level Referral Health Facilities.**
  - The strategy is aimed at **bridging the access gap in treatment and care of patients with chronic and severe NCDs.**
- It urges countries to put in place standardised programmes to tackle chronic and serious non-communicable diseases by ensuring that essential medicines, technologies and diagnostics are

available and accessible in district hospitals

## What are Non-Communicable Diseases (NCD)?

### ▪ About:

- **Non-communicable diseases (NCDs) are medical conditions or diseases that are not caused by infectious agents.**
  - These are **chronic diseases of long duration, and generally slow progression and are the result of a combination of genetic, physiological, environmental and behaviours factors.**
- These diseases are those chronic conditions that **lead to high levels of disability and death among children, adolescents and young adults if left undiagnosed or untreated.**
- NCDs include heart diseases, cancers, diabetes, asthma among others.
- Globally, NCDs are the main cause of morbidity and mortality.
  - They **account for 71% of global mortality**, according to [World Health Organisation \(WHO\)](#).
  - In the African Region, the proportion of mortality due to NCDs ranges from 27-88%.

## What is the status of Non-Communicable Diseases (NCD) in India?

### ▪ About:

- In India, nearly **5.8 million people (WHO report, 2015) die from NCDs (heart and lung diseases, stroke, cancer and diabetes) every year** or in other words 1 in 4 Indians has a risk of dying from an NCD before they reach the age of 70.
  - Further, it is found that **there is an increase in the contribution of NCDs from 30% of the total disease burden- 'disability-adjusted life years' (DALYs) in 1990 to 55% in 2016** and also an increase in proportion of deaths due to NCDs (among all deaths) from 37% in 1990 to 61% in 2016.
  - The four major NCDs are cardiovascular diseases (CVDs), cancers, chronic respiratory diseases (CRDs) and diabetes.

### ▪ Causes:

- **Physical inactivity, unhealthy diets (diets low in fruit, vegetables, and whole grains, but high in salt and fat), tobacco use (smoking, secondhand smoke, and smokeless tobacco), and the harmful use of alcohol** are the main behavioural risk factors for NCDs.
  - They contribute to raised blood pressure (hypertension),
  - Raised blood sugar (diabetes),
  - Raised and abnormal blood lipids (dyslipidaemia),
  - Further, **air pollution is also a leading risk factor for NCDs** in terms of both outdoor air pollution and household air pollution that mainly results from burning solid fuels in the home for cooking and heat.

### ▪ Initiatives:

- **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke (NPCDCS):**
  - With the objective to **increase awareness of risk factors, to set up infrastructure (like NCD clinics, cardiac care units)** and to carry out opportunistic screening at primary health care levels.
  - In response to the **WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020.**
    - India is the **first country to adopt the National Action Plan with specific national targets and indicators** aimed at reducing the number of global **premature deaths from NCDs by 25% by 2025.**
  - **Sub Components:**
    - **Integration of NPCDCS** with the [National Health Mission \(NHM\)](#) resulted into **augmented infrastructure** and **human resources**



- particularly in the form of **frontline workers- the ANM and the Accredited Social Health Activist (ASHA)**.
- **Prevention and management of chronic obstructive pulmonary disease (COPD) and chronic Kidney disease (CKD)**, and better management of co-morbidities such as diabetes and tuberculosis are also considered under the programme.
  - **Integration of Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH) NPCDCS** is a further step for promoting healthy lifestyle changes among the population.
    - Health promotion through social media is also being used to generate awareness about prevention and control of NCDs,
      - such as use of mobile technology in applications called **mDiabetes** for diabetes control, **mCessation** to help quit tobacco, and **no more tension** as a support for mental stress management.

[Source: DTE](#)

## MoU for Multi Modal Logistics Park

**For Prelims:** Multi Modal Logistics Park, Bharatmala Pariyojna, Tripartite Agreement

**For Mains:** Infrastructure, Significance of Logistic Sector in Economy, Multi Modal Logistics Park, Bharatmala Pariyojna

### Why in News?

Recently, the Government of India has signed the **tripartite agreement for swift development of modern Multi Modal Logistics Parks (MMLP)** under **Bharatmala Pariyojna** across the country.

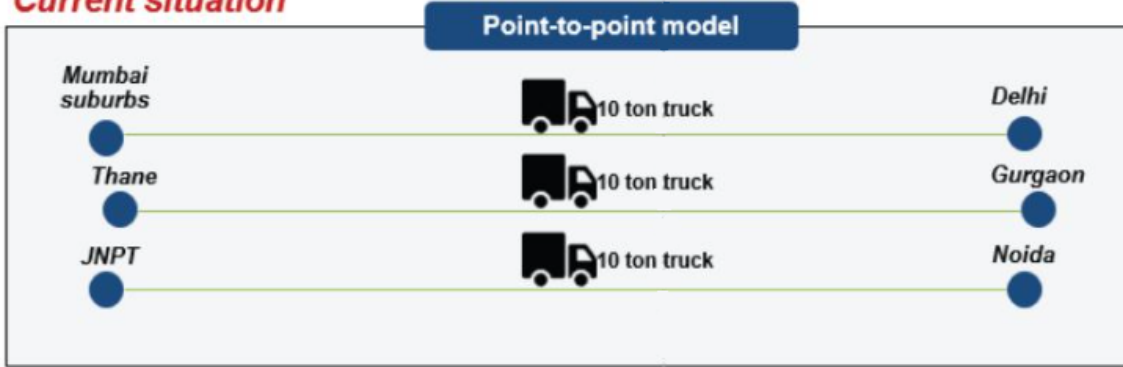
- The objective is to **centralize freight consolidation** and **reduce logistics cost** from 14% to less than 10% of **Gross Domestic Product** at par with International Standards.

### What do we need to know about the Agreement?

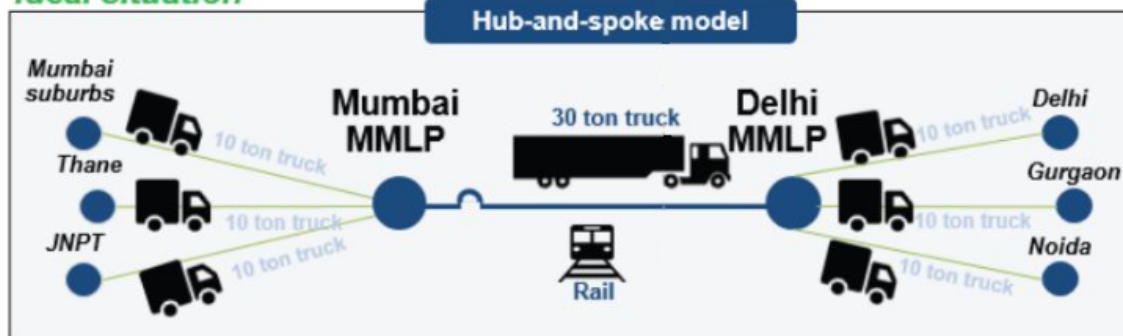
- **The tripartite agreement was signed by:**
  - **National Highways Logistics Management Limited (NHLML):**
    - It is a **Special Purpose Vehicle (SPV) of the National Highway Authority (NHAI)** of the Ministry of Road Transport & Highways
  - **Inland Waterways Authority of India (IWAI):**
    - It is a statutory authority under the Ministry of Ports, Shipping & Waterways.
  - **Rail Vikas Nigam Limited (RVNL)**
    - It is wholly owned **Public Sector Enterprise** under the **Ministry of Railways**.
- The agreement underlines the **cooperation & collaboration model** between the three bodies in order to achieve **efficiency in logistics movement within the country**.
- It will provide **seamless modal shift**, MMLPs will ensure that **cargo is swapped/shifted from and to Waterways, Dedicated Freight Corridors & Road Transport**.

### What is a Multi Modal Logistics Park (MMLP)?

## Current situation



## Ideal situation



### ▪ About:

- Developed under a **'Hub & Spoke'** model, the MMLP will integrate multiple modes of freight transport through **highways, railways & inland waterways**.
- The Multi Modal Logistic Park project is poised to **develop state-of-the-art large scale warehousing facilities** for different types of commodities, to become a **one stop solution for all services** related to cargo movement like **warehousing, custom clearance, parking, maintenance of trucks etc.**
  - **It will have all the facilities like** warehouses, railway siding, cold storage, custom clearance house, yard facility, workshops, petrol pumps, truck parking, administrative building, boarding lodging, eating joints, water treatment plant, etc.

### ▪ Focus:

- The MMLPs will focus on a **technology driven implementation** for a state-of-the-art freight management system.
  - Many value-added services like **packaging, repackaging and labelling** will be available in these projects.
- MMLP will be a **freight handling facility for mechanised material handling and value-added services** along with other associated facilities.

## What is Bharatmala Pariyojna?

# BharatMala: Connecting India Like Never Before



34,800 km of roads  
to be constructed



Rs. 5,35,000  
crores to be invested



- **Economic Corridors (9000 km):**  
To unlock full economic potential
- **Inter Corridor and Feeder Route (6000 km):**  
Ensuring holistic connectivity
- **National Corridors Efficiency Improvement (5000 km):**  
Enhancing efficiency
- **Border Roads and International Connectivity (2000 km):**  
Boosting Border Connectivity
- **Coastal Roads and Port Connectivity (2000 km):**  
Leveraging Ports for Progress
- **Green field Expressways (800 km):**  
Express speeds for Express gains
- **Balance NHDP works (10,000 km):**  
Boosting all round connectivity

## ▪ About:

- Bharatmala Pariyojana is an **umbrella program for the highways sector** envisaged by the **Ministry of Road Transport and Highways**.

## ▪ Focus:

- It calls for **improvement in efficiency of existing corridors** through development of **Multimodal Logistics Parks and elimination of choke points**.
- It enhances focus on **improving connectivity in North East** and leveraging synergies with Inland Waterways.
  - North East Economic corridor enhancing connectivity to state capitals and key towns.
  - Multimodal freight movement via 7 Waterway terminals on River **Brahmaputra - Dhubri, Silghat, Biswanath Ghat, Neamati, Dibrugarh, Sengajan, Oriyamgh**.
- It emphasizes the **use of technology & scientific planning** for project preparation and asset monitoring.
- It calls for **seamless connectivity with neighboring countries**:
  - 24 Integrated check posts (ICPs) identified
  - Transit through Bangladesh to improve North East connectivity
  - Integrating **Bangladesh - Bhutan - Nepal and Myanmar - Thailand corridors** which will make NorthEast hub of East Asia
- **Satellite mapping** of corridors to identify upgradation requirements

## ▪ Objectives:

- To **optimise the efficiency of freight and passenger movement** across the country by bridging critical infrastructure gaps through effective interventions.
- **The effective interventions include** the development of economic corridors, inter corridors and feeder routes, national corridor efficiency improvement, border and international connectivity roads, coastal and port connectivity roads and greenfield expressways.
  - **Economic Corridors:**
    - These are integrated networks of infrastructure within a geographical area designed to stimulate economic development.
  - **Greenfield Projects:**
    - They lack constraints imposed by prior work on the site. Typically, it entails

development on a completely vacant site and architects start completely from scratch.

- **Brownfield Projects:**

- They carry constraints related to the current state of the site and might be contaminated or have existing structures that architects have to tear down or modify in some way before the project can move forward.
- To generate a large number of **direct and indirect employment opportunities** in the construction and infrastructure sector and also as part of the **enhanced economic activity** resulting from better road connectivity across the country.
- To connect **550 districts in the country through national highway linkages**.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

**Q.** What is the significance of Industrial Corridors in India? Identifying industrial corridors, explain their main characteristics. (2018)

[Source: PIB](#)

## Wind Projects in India

**For Prelims:** Wind Energy, Renewable Sources of Energy, Government Initiatives

**For Mains:** Significance of Wind Energy, Challenges in Wind Energy Projects, Related Government Initiatives

### Why in News?

**The Global Wind Energy Council (GWEC) and MEC Intelligence (MEC+)**, a consulting firm that specialises in renewable energy has reported that **annual installation of new [wind power projects](#)** in India will peak by 2024 and likely decline thereafter.

- After 2024, fresh projects are likely to be **wind-solar hybrids**.

### What do we need to know about Wind Projects in India?

- **About:**

- **Wind energy** today typically comes in two different types:
  - **Onshore wind farms** which are large installations of wind turbines located on land.
  - **[Offshore wind farms](#)** which are installations located in bodies of water.

- **Status:**

- India currently has **13.4 GW of prospective projects in wind energy**, which are expected to **drive installations until 2024 in the market**.
- India is **expected to add 3.2 GW in 2022, 4.1 GW in 2023 peaking to 4.6 GW in 2024, thereafter declining to 4 GW and 3.5 GW in the next two years**.
- Wind industry installations have been **slowing down in India since 2017**.
  - Only 1.45 GW of wind projects were installed in 2021 with many delayed due to



the [second wave of Covid-19](#) and **supply chain-related disruptions**.

▪ **Challenges:**

- The market has **concentrated wind projects around a few substations of Gujarat and Tamil Nadu**, which were home to the strongest resource potential and lowest cost of land.
  - This created **bottlenecks and slowed down project activity** and made it **costlier than solar power**.
- India's track record has indicated that the **wind installation market is a lumpy market**.
  - Considerable momentum has been built in the pipeline since 2017-2018, **but inordinate delays in project execution** have challenged the assumptions of developers.
- Due to the COVID-19 pandemic and supply chain constraints, **the overall dues of electricity distribution companies (DISCOM) have ballooned**.
  - The outstanding payments to RE generators increased by 73% to ₹19,400 crores in December 2021, as compared to ₹11,200 crores in December 2020.

▪ **Energy Potential of India:**

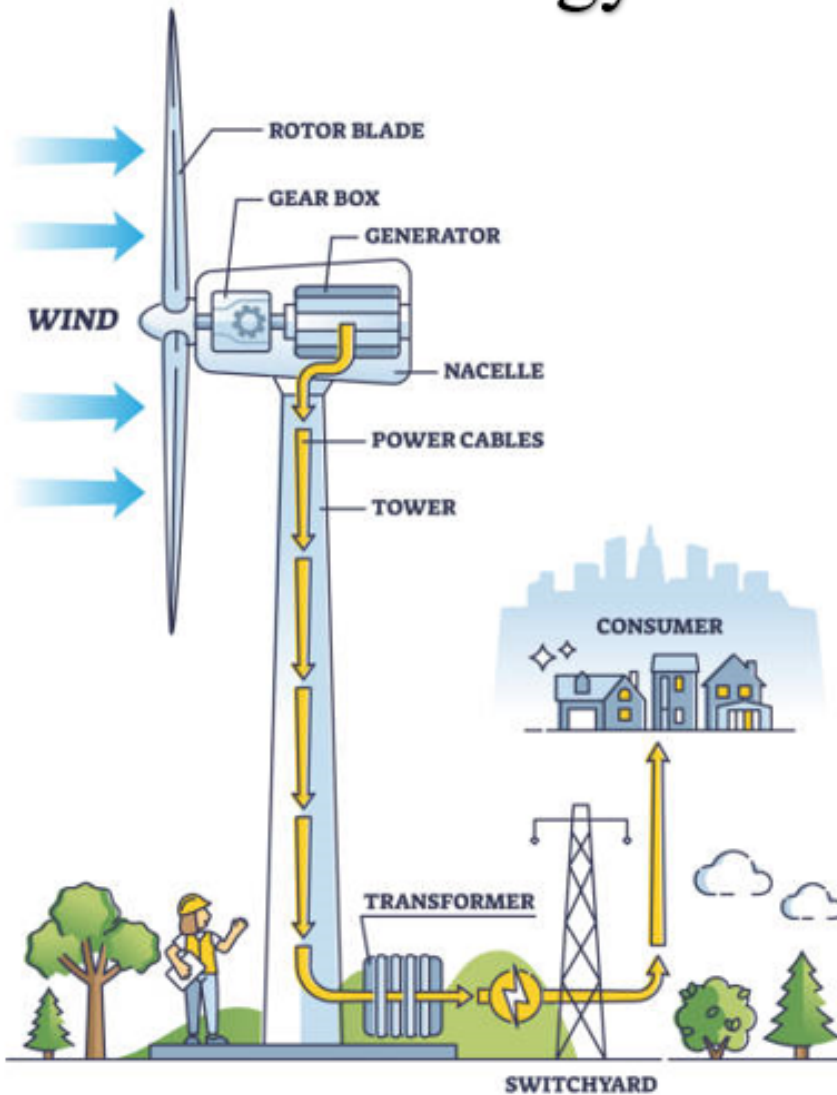
- India has potential of about 60 GW of wind.
  - It is quite likely that **it would go up substantially** because over time some of the **old wind power stations** that have very low capacity **could be replaced with wind turbines** which have higher capacity.
- There is another unexplored area, which is in the oceans.
  - Across the world, **exploration from this area is at a nascent stage**.
    - India has a bit of a problem because **on eastern side it has a lot of cyclones which hit the coast**.
      - Probably, **it can explore wind energy on the western side**.
- India is a country having around **7,516.6 km long coastline** and in all of its **exclusive economic zones**, it has enough opportunity to harness wind energy.
- It is found by the **National Institute for Wind Energy (based in Chennai)** that **western states** have larger potential in terms of a stable, steady and a speedy windflow starting from **Gujarat, Maharashtra, Karnataka to Tamil Nadu and Andhra Pradesh**.
  - Tamil Nadu is the largest producer of wind energy producing 9,075MW in 2019.

**What do we know about Wind Energy?**





# Wind Energy



## ▪ About:

- **Wind is used** to produce electricity using the **kinetic energy created by air** in motion. This is transformed into electrical energy **using wind turbines or wind energy conversion systems**.
  - Wind first **hits a turbine's blades**, causing them to **rotate** and turn the **turbine** connected to them.
  - That changes the **kinetic energy to rotational energy**, by moving a shaft which is **connected to a generator**, and thereby **producing electrical energy through electromagnetism**.
  - The electricity is **sent through transmission and distribution lines** to homes, businesses, schools, and so on.
- The amount of power that **can be harvested from wind depends on the size of the turbine and the length of its blades**.
  - The output is proportional to the dimensions of the rotor and to the cube of the wind speed.
  - Theoretically, **when wind speed doubles, wind power potential increases by a factor of eight**.

## ▪ History:

- Wind turbines **first emerged more than a century ago**.
- Following the **invention of the electric generator in the 1830s**, engineers started

- attempting to harness wind energy to produce electricity.
- **Wind power generation** took place in the United Kingdom and the United States in 1887 and 1888, but modern wind power is considered to have been **first developed in Denmark**.

## What are the Related Initiatives?

- **National Wind-Solar Hybrid Policy:**
  - The main objective of the [National Wind-Solar Hybrid Policy](#), 2018 is to provide a **framework for promotion of large grid connected wind-solar PV hybrid systems** for optimal and efficient utilization of wind and solar resources, transmission infrastructure and land.
- **National Offshore Wind Energy Policy:**
  - [The National Offshore wind energy policy](#) was notified in October 2015 with an objective to develop the offshore wind energy in the Indian [Exclusive Economic Zone \(EEZ\)](#) along the Indian coastline of 7,516.6 km.

## Way Forward

- Governments need to tackle issues such as **planning barriers and grid connection challenges**.
- To sustain and increase growth in wind-based generation capacity, **policymakers need to streamline the procedures to grant permits**, including land allocation and grid connection projects.
- **Workforce planning for large-scale renewables deployment** should be an early policy priority and investment in grids must treble from current levels through 2030.
- There is also a need for **greater public-private co-operation** to confront “the new geopolitics of the wind supply chain”.
- A stronger international regulatory framework is needed to address the increased competition for commodities and critical minerals.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

**Q.** Give an account of the current status and the targets to be achieved pertaining to renewable energy sources in the country. Discuss in brief the importance of National Programme on Light Emitting Diodes (LEDs). **(2016)**

[Source: IE](#)

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## Launch of Artemis I Mission

**For Prelims:** UPSC, IAS, National Aeronautics and Space Administration (NASA), Artemis I, moon mission, Chandrayaan project, Indian Space Research Organisation (ISRO), History of Moon Exploration

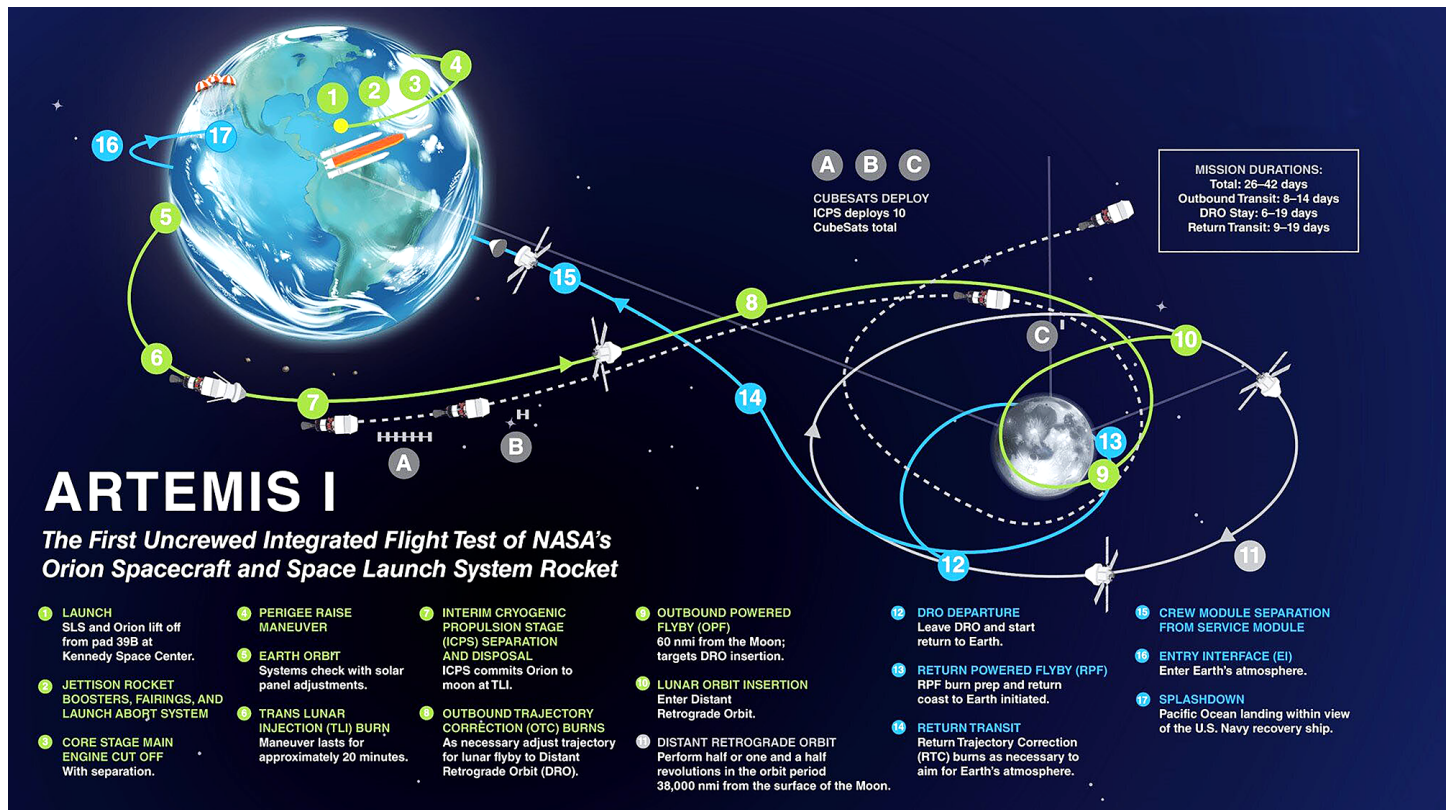
**For Mains:** Space Exploration, Moon mission, Sending Human on Moon and Mars.

## Why in News?

[National Aeronautics and Space Administration \(NASA\)](#) is about to launch its [Artemis Program](#).

## What is Artemis I Mission?

- **Artemis I** is an **uncrewed mission of NASA**.
- It will test the agency's **Space Launch System (SLS) rocket and Orion crew capsule**.
- Artemis I will be the **first in a series of increasingly complex missions to build a long-term human presence at the Moon for decades to come**.
  - The primary goals for Artemis I are to **demonstrate Orion's systems in a spaceflight environment and ensure a safe re-entry, descent, splashdown, and recovery** prior to the first flight with crew on Artemis II.



## What will be the Key Events During the Mission?

- **Artemis I launch**
  - The SLS rocket and Orion spacecraft have **completed their journey from their assembly building to Launch Complex 39B at the Kennedy Space Centre in Florida**.
  - At launch, the rocket will produce a maximum of more than **3.9 million kilograms of thrust** from its **four RS-25 engines and five-segment boosters**.
  - Shortly after launch, the **boosters, service module and launch abort systems** will be offloaded.
  - Then, the **core stage engines will be shut down** and the **core stage will separate from the spacecraft**.
- **Artemis I: Trajectory to the moon**
  - After launch, the **spacecraft will orbit the Earth and deploy its solar arrays**.
  - Next, the **Interim Cryogenic Propulsion Stage (ICPS) will give Orion a “push” to help it leave Earth's orbit** and travel toward the planet's only natural satellite.
  - Then, within about two hours from launch time, when **the spacecraft is on a trajectory to the Moon, it will separate from ICPS**.
  - When it separates from the spacecraft, ICPS will **deploy small satellites, known as [CubeSats](#)** to send them on their journey to deep space.
    - This includes **BioSentinel**, which will **carry yeast into deep space** to study the

### effects of deep space radiation on living matter.

- The other CubeSats will also perform many science and technology demonstrations.

#### ▪ **Artemis I: Moon orbit**

- On its path to the Moon, **Orion will be propelled by a service module** built by the **European Space Agency**.
  - Apart from supplying the spacecraft's propulsion system and power, the service module is also designed to house air and water for future crewed missions.
- Once it enters the **Moon's orbit**, the spacecraft will **collect data**.
- Afterwards, Orion will **use a precisely timed engine firing of the service module in combination with the Moon's gravity to accelerate back towards our planet**.

#### ▪ **Artemis I: Reentry into Earth's atmosphere**

- After a total **mission time of around 6 weeks**, Orion will enter Earth's atmosphere.
- And if all goes as planned, **it will land in the sea, within eyesight of a recovery ship** stationed off the coast of **Baja in California**.

## What is the History of Moon Exploration?

- In 1959, the **Soviet Union's uncrewed Luna 1 and 2** became the first rover to visit the Moon.
- The US began trying to put people in space as early as **1961**.
- Eight years later, on 20th July, 1969, **Neil Armstrong along with Edwin "Buzz" Aldrin became the first human to step on the Moon** as part of the Apollo 11 mission.
  - Before the USA sent the **Apollo 11 mission to the Moon**, it sent three classes of robotic missions between **1961 and 1968**.
- After July 1969, **12 American astronauts walked on the surface of the Moon until 1972**.
- In the 1990s, the USA resumed **lunar exploration with robotic missions Clementine and Lunar Prospector**.
- In 2009, it began a new series of robotic lunar missions with the launch of the **Lunar Reconnaissance Orbiter (LRO) and the Lunar Crater Observation and Sensing Satellite (LCROSS)**.
- In 2011, NASA began the ARTEMIS.
- In 2012, the **Gravity Recovery and Interior Laboratory (GRAIL)** spacecraft studied the Moon's gravity.
- Apart from the USA, the European Space Agency, Japan, China, and India have sent missions to explore the Moon.
- China landed two rovers on the surface, which includes the **first-ever landing on the Moon's far side in 2019**.

## What are ISRO's Moon Exploration Efforts?

#### ▪ **Chandrayaan 1:**

- The **Chandrayaan project** began in 2007 with an agreement between **India's space agency ISRO and Russia's ROSCOSMOS for mutual cooperation**.
- However, the mission was postponed in January 2013 and rescheduled to 2016 as Russia was unable to develop the lander on time.
- **Findings:** Confirmed presence of lunar water.
  - Evidence of lunar caves formed by an ancient lunar lava flow.
  - Past tectonic activity was found on the lunar surface.
  - The faults and fractures discovered could be features of past interior **tectonic activity** coupled with **meteorite** impacts.

#### ▪ **Chandrayaan-2** is India's second mission to the moon and comprises a **fully indigenous Orbiter, Lander (Vikram) and Rover (Pragyan)**.

- The Rover Pragyan is housed inside **Vikram lander**.

#### ▪ The **Indian Space Research Organisation (ISRO)** recently announced India's third lunar mission **Chandrayaan-3**, which will comprise a lander and a rover.



## UPSC Civil Services Examination, Previous Year Question

Q. Which of the following pairs is/are correctly matched? (2014)

	Spacecraft	Purpose
1.	Cassini-Huygens	Orbiting the Venus and transmitting data to the Earth
2.	Messenger	Mapping and investigating the Mercury
3.	Voyager 1 and 2	Exploring the outer solar system

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (b)

- Cassini-Huygens was sent to study Saturn and its moons. It was a joint collaboration between NASA and European Space Agency. It was launched in 1997 and entered Saturn's orbit in 2004. The mission ended in 2017. Hence, pair 1 is not correctly matched.
- Messenger, a spacecraft by NASA was sent to map and investigate Mercury. It was launched in 2004 and entered Mercury's orbit in 2011. The mission ended in 2015. Hence, pair 2 is correctly matched.
- Voyager 1 and 2 were launched by NASA in 1977 to explore the outer solar system. Both the spacecrafts are still operational. Hence, pair 3 is correctly matched.
- **Therefore, option (b) is the correct answer.**

[Source: IE](#)

## India-Bangladesh River Water Sharing MoU

### Why in News?

Recently, India and Bangladesh have finalised the text of the **Memorandum of Understanding (MoU) on interim water sharing of the Koshiyara river.**

### What are the Key Highlights of the MoU?

- It was finalised during the 38<sup>th</sup> **meeting of the ministerial-level Joint Rivers Commission (JRC)** of India and Bangladesh,
- **It welcomed the finalisation of the design and location of the water intake point on Feni River to meet the drinking water needs** of Sabroom town in Tripura as per the October 2019 India-Bangladesh MoU.
  - Further, the discussion was held on a number of ongoing bilateral issues of mutual interest, including **water-sharing of common rivers, sharing of flood data, addressing river pollution, conducting joint studies on sedimentation management, river bank protection works, etc.**



## What is Joint Rivers Commission (JRC)?

### ▪ About:

- The [Joint Rivers Commission](#) of India and Bangladesh was **constituted in the year 1972 as a bilateral mechanism to address issues of mutual interest on common / border / transboundary rivers.**
- The JRC is headed by **Water Resources Ministers of both countries.**

### ▪ Significance:

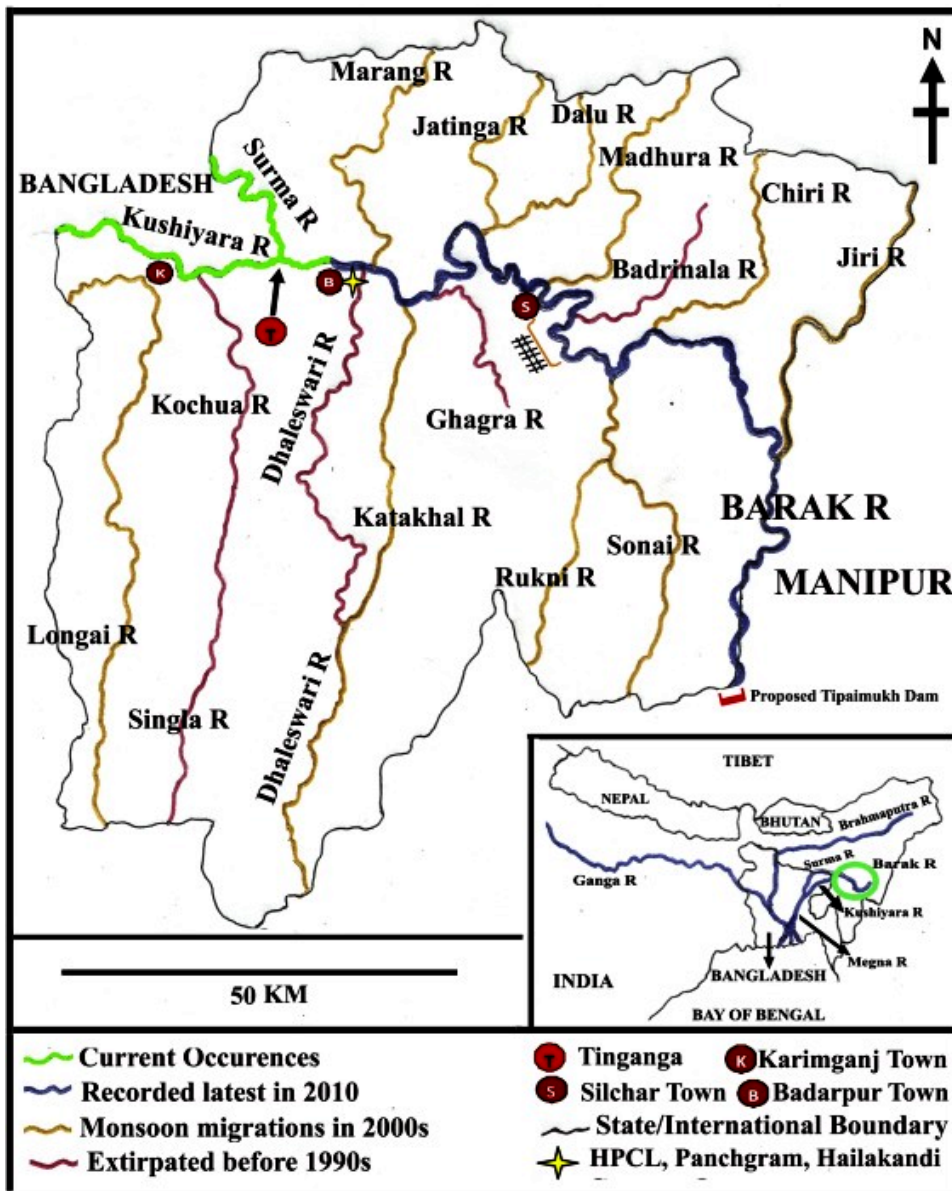
- It is **commencing after a long gap of twelve years**, although technical interactions under the framework of JRC have continued in the interim.
- **As India and Bangladesh share 54 rivers**, of which seven have been identified earlier for developing the framework of water-sharing agreements on priority.
  - During the latest meeting, they **agreed to include eight more rivers for data exchange.**

### ▪ Outcomes:

- It discussed the whole gamut of issues related to **common rivers between the two countries, especially the [Ganges](#), [Teesta](#), Manu, Muhuri, Khowai, Gumti, Dharla, Dudhkumar, and Kushiya.**
  - Apart from this, the exchange of **flood-related data and information, riverbank protection works, joint basin management**, and the Indian river interlinking project was discussed in detail.
- It agreed to undertake some more common rivers for the exchange of data and information towards preparing the draft framework of the interim water sharing agreement.

## What are the Key Points of Kushiya River?





- The Kuchiyara River is a **distributary river in Bangladesh and Assam.**
  - It **forms on the India-Bangladesh border as a branch of the Barak River when the Barak separates into the Kuchiyara and Surma.**
- The waters of the Kuchiyara pick up **tributaries from Manipur, Mizoram, and Assam.**
- The Kuchiyara rejoins with the Surma at Markuli in Ajmiriganj upazila (Bangladesh) and flows south upto Bhairab Bazar (Bangladesh) receiving the name Kalni.
- The Kalni meets with the Dhanu (Bangladesh), a branch of the Surma and renamed as the Meghna.

### What are the Key Facts About Feni River?

- The Feni River, also known as Feni Nodi in Bengali, forms part of the India-Bangladesh border.
- It originates in the South Tripura district, passes through Sabroom town on the Indian side, and meets the Bay of Bengal after it flows into Bangladesh
- It has great agricultural importance for the people living in the towns near to this river.
- This river is also the **source of their livelihood** through which they obtain a number of benefits like watering their crops with its water and also using the water for their regular use.
- **Maitri Setu, a 1.9km Long Bridge Over Feni River** is constructed in Tripura to link India-Bangladesh.

## UPSC Civil Services Examination Previous Year Question (PYQ)

### Prelims

**Q. With reference to river Teesta, consider the following statements: (2017)**

1. The source of river Teesta is the same as that of Brahmaputra but it flows through Sikkim.
2. River Rangeet originates in Sikkim and it is a tributary of river Teesta.
3. River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

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

- (a) 1 and 3 only  
(b) 2 only  
(c) 2 and 3 only  
(d) 1, 2 and 3

**Ans: (b)**

**Exp:**

- River Teesta/Tista originates from the Tso Lhamo lake of North Sikkim Himalayas and the Brahmaputra originates in the Kailash ranges of Himalayas. **Hence, statement 1 is not correct.**
- Teesta runs downhill through Sikkim and Darjeeling hills and then meanders along the plains of West Bengal before entering into Bangladesh, where it flows into the river Brahmaputra at Fulchori. **Hence, statement 3 is not correct.**
- **Rangeet, the largest river in the State of Sikkim, is the main tributary of river Teesta** which originates in the Himalayan mountains of West Sikkim district. **Hence, statement 2 is correct. Therefore, option (b) is the correct answer.**

[Source: IE](#)

## One Nation One Fertiliser

### Why in News?

The Ministry of Chemicals and Fertilisers has announced that it has been decided to implement **One Nation One Fertiliser** by introducing a “**Single Brand for Fertilisers and Logo**” under the [fertiliser subsidy](#) scheme named “**Pradhanmantri Bhartiya Janurvarak Pariyojna**” (PMBJP).

### What is One Nation One Fertiliser Scheme?

- **About:**
  - Under ONOF **companies are allowed** to display their **name, brand, logo and other relevant product information** only on **one-third space** of their bags.
    - On the remaining **two-thirds space**, the “**Bharat**” brand and **Pradhanmantri Bharatiya Jan Urvarak Pariyojana logo** will have to be shown.
  - The single brand name for [UREA](#), [Di-Ammonium Phosphate DAP](#), **Muriate of potash (MOP)** and Nitrogen Phosphorus Potassium **NPK** etc. would be **BHARAT UREA, BHARAT DAP, BHARAT MOP** and **BHARAT NPK** etc. respectively for all Fertiliser Companies, State

Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs).

- This scheme **applies to both public & private sector companies.**
- It will bring about **uniformity in fertiliser brands across the country**

▪ **Possible Drawbacks:**

- It will **disincentivise fertiliser companies from undertaking marketing and brand promotion activities.**
  - They will now be **reduced to contract manufacturers and importers for the government.**
- Currently, in case of any bag or batch of fertilisers not meeting the required standards, the blame is put on the company.
  - But now, **that may be passed on fully to the government.**

## UPSC Civil Services Examination, Previous Year's Question (PYQs)

### Q. With reference to chemical fertilizers in India, consider the following statements: (2020)

1. At present, the retail price of chemical fertilizers is market-driven and not administered by the Government.
2. Ammonia, which is an input of urea, is produced from natural gas.
3. Sulphur, which is a raw material for phosphoric acid fertilizer, is a by-product of oil refineries.

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

- (a) 1 only  
(b) 2 and 3 only  
(c) 2 only  
(d) 1, 2 and 3

### Ans: (b)

- The Government of India subsidizes fertilizers to ensure that fertilizers are easily available to farmers and the country remains self-sufficient in agriculture production. The same has been achieved largely by controlling the price of fertilizer and the amount of production. Hence, statement 1 is not correct.
- Ammonia (NH<sub>3</sub>) has been synthesized from natural gas. In this process, natural gas molecules are reduced to carbon and hydrogen. The hydrogen is then purified and reacted with nitrogen to produce ammonia. This synthetic ammonia is used as fertilizer, either directly as ammonia or indirectly after synthesis as urea, ammonium nitrate, and monoammonium or diammonium phosphates. Hence, statement 2 is correct.
- Sulfur is a major by-product of oil refining and gas processing. Most crude oil grades contain some sulfur, most of which must be removed during the refining process to meet strict sulfur content limits in refined products. This is done through hydrotreating and results in production of H<sub>2</sub>S gas, which is converted into elemental sulfur. Sulfur can also be mined from underground, naturally-occurring deposits, but this is more costly than sourcing from oil and gas and has largely been discontinued. Sulfuric acid is used in the production of both Mono ammonium Phosphate (MAP) and Diammonium Phosphate (DAP). Hence, statement 3 is correct. Therefore, option (b) is the correct answer

[Source: IE](#)

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# Smart India Hackathon

## Why in News?

The Prime Minister of India addressed the **Grand Finale of Smart India Hackathon 2022** via video conferencing.

## What is the Smart India Hackathon?

### ▪ About:

- Smart India Hackathon (SIH) was **started in the year 2017**.
- Smart India Hackathon is a **nationwide initiative** to provide students with a **platform to solve some of the pressing problems** we face in our daily lives, and thus **inculcate a culture of product innovation and a mindset of problem-solving**.
  - SIH has been conducted every year since 2017 in two formats, **SIH Software and SIH Hardware Editions** for higher education students.
  - The first four editions SIH2017, SIH2018, SIH2019 and SIH2020 proved to be **extremely successful in promoting innovation out-of-the-box thinking** in young minds, especially engineering students from across India.
- Smart India Hackathon is an initiative by the **Ministry of Education, All India Council for Technical Education (AICTE)**, Persistent Systems and Inter Institutional Inclusive Innovation Centre (i4C).

### ▪ Aim:

- It aims to inculcate the **culture of product innovation, problem-solving and out-of-the-box thinking among students**.

### ▪ SIH 2022:

- The number of teams registered for SIH has seen a four-fold growth from around **7,500 in the first edition to about 29,600 in the ongoing fifth (2022) edition**.
- More than 15,000 students and mentors are travelling to the 75 nodal centres to take part in the SIH 2022 grand finale.
- Students from over 2900 schools and 2200 Higher Education Institutions will tackle 476 problem statements from across 53 Union Ministries in the finale, including **Optical Character Recognition (OCR)** of Temple inscriptions and **translations in Devanagari Scripts, IoT-enabled risk monitoring system** in Cold Supply Chain for perishable food items, **High-resolution 3D model of terrain, infrastructure and roads conditions in disaster struck areas, etc.**
- This year, **Smart India Hackathon - Junior** has also been introduced as a pilot for school students to build a culture of innovation and develop problem-solving attitude at the school level.

[Source: PIB](#)