



News Analysis (10 Mar, 2021)

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Independent Environment Regulator

Why in News

Recently, the **Supreme Court** (SC) asked the government to explain the reasons for not setting up an “**Independent Environment Regulator**” to oversee green clearances.

Key Points

- **SC’s Order:**

SC had ordered the setting up of a national environment regulatory body under the **Environment (Protection) Act, 1986** to ensure independent oversight of green clearances way back in ***Lafarge Umiam Mining Private Limited v. Union of India case (2011)***, commonly known as the **Lafarge mining case**.

- **Envisaged Functions of the Regulator :**

- **Appraisal and Approval:**

The regulator will carry out **independent, objective and transparent appraisal and approval of projects** for environmental clearances.

- **Monitoring and Implementation:**

It will also **monitor the implementation of the conditions** laid down in the clearances and impose **penalties on polluters**. While exercising such powers, the regulator will ensure the **National Forest Policy, 1988** is duly implemented.

- **Current Issues:**

- **Related to Environment Impact Assessment (2006):**

- **Lack of Capacity:**

- The **environmental clearance at the national level** is overseen by an **Expert Appraisal Committee (EAC)**, which functions on an ad-hoc basis, **without much regulatory capacity.**

- The state-level appraisal committees overseeing the clearance also function without much regulatory support.

- The committees function as per the **Environment Impact Assessment (EIA) Notification 2006.**

- **Lack of Expertise:**

- The EAC has been **questioned on many occasions for lack of expertise** of its members and chairpersons.

- **Lack of Proper Legislation:**

- EAC and the state-level committees are **toothless due to the lack of effective legislative power and supporting institutional capacity.**

- **Multiplicity of Regulations and Increasing Cost:**

- There are too many clearances for the same thing; and none of them seem to be working for the environment or for **protecting the rights of communities.** Worse, they are adding to the burden of industry in terms of high transaction costs.

- Forest clearance under Section 2 of the **Forest (Conservation) Act, 1980.**

- Coastal clearance under the **Coastal Regulation Zone Notification, 2011.**

- Wildlife clearance under the **Wildlife Protection Act, 1972.**

- This **multiplicity of regulations** and regulatory authorities help unscrupulous elements in the industry and the government.

- **Need:**
 - **Unbiased Decision Making:**
Lack of an independent body to oversee the entire environmental regulatory process could lead to a possible political interest in the decision making.
 - **Proper Compliance:**
The major concerns regarding EIA norms, such as the compliance monitoring and ex-post regularisation, could be tackled with proper standard-setting by a regulator.
 - **Capacity and Independence:**
The present environmental regulation institutional mechanism in India, which lies with pollution control boards at the state and central level, lacks regulatory capacity and independence.
 - **Preventing Regulatory Delays:**
Cutting down on regulatory delays is also important. This may be possible with the help of a credible independent regulator. But an optimum level of rigour in the regulatory process and standards is important for environmental protection.
- **Temporary Solution:**
As per the SC till an Independent Regulator was put in place, the Environment Ministry should prepare a **panel of accredited institutions from which alone the project proponent should obtain the Rapid Environmental Impact Assessment (EIA).**

Way Forward

- Independence in standard-setting, monitoring, and enforcement are important characteristics of an effective regulatory body. Setting-up of a stand-alone independent body must **precede fragmented revamping of environmental laws.**
- A **second-generation reform for environmental regulation**, which will safeguard environment and community rights as well as reduce time and transaction costs for the industry is the need of the hour.
- What is needed is to **reduce multiplicity, remove archaic laws and streamline regulatory procedure.**

Source:TH

Rationalisation of Railway Fares

Why in News

The **Parliamentary Standing Committee** on Railways has suggested **rationalisation of both freight and passenger fares.**

Key Points

- **Committee's Observation:**
 - **Social Service Obligations:**
 - The **losses incurred by the railways in passenger services purportedly due to the social service obligations** which include pricing tickets at fares lower than costs and passenger concessions.
 - The railways incur losses to the tune of **Rs. 35,000-38,000 crore a year** in the passenger segment.
 - **Effect of Covid:**

Revenues from passenger services further deteriorated due to suspension of operations during **Covid-19**.
 - **Operating Ratio:**
 - Noted the regular deterioration in Railways **Operating Ratio (OR)**.
 - **OR** indicates how much the Railways spend to earn a rupee. It helps determine the financial health of the Railways.
 - For example, an operating ratio of **98.36% for 2019-20**, indicates that to earn Rs. 100, the Railways will have to spend Rs. 98.36.
 - For **2020-21**, it is estimated to be **131.4%**.
 - For **2021-22**, Railways is targeting OR of **96.15%**.
- **Challenges in the Functioning of Railways:**
 - Indian Railways' ills are as multifarious as they are well-known: **bureaucratic, obese structure with a misconceived perception of public-service-obligation, warped investment priorities, capacity crunch on arterial routes**, strained terminals, **irrational fare & freight structures**.
 - It has **one of the highest rail freight charges in the world**. This has also **resulted in consumers moving to roadways** for freight transportation, which is more convenient for them.
 - The predicament of the railways is that the **profits earned from freight business are utilised to compensate for the losses incurred on passenger and other coaching services**, thereby adversely affecting both freight and passenger business.

- **Committee’s Suggestions:**

- **Revisiting social service obligations** and resuming services suspended during covid.
- **Adjust Passengers Fares:**
 - Undertake “**prudent adjustment**” of passenger fares **to reduce the burden on freight segments.**
- **Make Fares Demand-cum-Market Driven:**
 - Both passenger fares and freight rates have to be **demand-cum-market driven** and fixed differently for different segments.
- **Retain Customers:**
 - As the demand for transport is elastic in a competitive market the Railways should be mindful of the fact that **any increase in fares should be confined to a certain limit depending upon the competition from other transport modes.**
 - The operational efficiencies of the railways in both freight and passenger business have to be leveraged to a greater extent so as to **retain the customer base and enhance revenues.**
- **Strengthen Planning and Management:**
 - The railways should **strengthen their planning, management and monetary mechanisms** to earn substantial non-fare revenues through various methods/sources, already intended and put in place.
 - For example:** Dividends from its public sector undertakings, land lease, parking, sale of scrap, advertisements and publicity etc.
 - Railway **finances should be managed prudently** so that the **OR may reach at acceptable level** in the near future.

Recent Steps

- **Draft National Rail Plan:**

In December 2020 in an endeavour to address the inadequacies of capacity constraints and improve its modal share in the total freight ecosystem of the country, Indian Railways has come up with a Draft National Rail Plan.

- **Dedicated Freight Corridors:**

It is **a high speed and high capacity railway corridor** that is exclusively meant for the transportation of freight, or in other words, goods and commodities.

- **Introduction of Policy for Private Passenger Trains Operations:**

In July 2020, Indian Railways initiated the process to allow **private firms to operate passenger trains on its network through 151 new trains.**

- **Adarsh Station Scheme:**

It aims to upgrade the suburban stations of India to **Adarsh stations.**

- **Restructuring of the Railway Board and Merger of Different Railway Officer Cadres:**

In 2019-20, the government **approved the restructuring of the Indian Railways**, including a reduction in the Board strength as well as the merger of the different cadres into a central service called the **Indian Railway Management Service (IRMS)**.

Way Forward

- Subsidising the daily or frequent user can be done in the form of a **direct-to-bank account**, as is done in the case of several other government schemes. This will ensure the passengers pay a full price and **the government's subsidy burden is reduced to only those classes who need it the most**.
- As the country's growing transport market changes in character, the **key demands would be an integrated multi-modal 'whole journey' service**. Railways' passenger business strategy needs to aggressively target inter-city travel segments as its core business currently served by some 4,000 trains daily, addressing the acute shortage in supply of such services, substantially upgrading and accelerating them with modern pre-board and on-board services.

Source:TH

Parliamentary Standing Committee on Rural Development

Why in News

The Centre government must **increase the amount of pensions** provided for **poor senior citizens, widows and disabled people**, said the **Parliamentary Standing Committee** on Rural Development.

Key Points

Issues Pointed Out by the Parliamentary Standing Committee:

- The panel pointed out that it had **previously proposed the increase of the miniscule pensions** in its reports and slammed the government's "laxity in raising the amount".
- Also, criticised the implementation of **National Social Assistance Programme (NSAP)** in reaching out to the poor and downtrodden section of the society.
 - Pointed out the meagre amount of assistance ranging from **Rs. 200 to Rs. 500 per month** under the different components of this Scheme.
- Noted **the callous approach of the State Governments** in the proper implementation of the provision of unemployment allowance.
- Pulled up the **Department of Rural Development (DoRD)** for issues in implementation of the flagship **MGNREGA scheme**.

Little support | The National Social Assistance Programme is applicable to elders, widows and the physically challenged. **Here is a low-down:**

Pension: ₹200-₹500 a month for senior citizens BPL households

Widow Pension Scheme: ₹300-₹500 a month for widows aged over 40 in BPL households

Disability pension: ₹300 per month for persons aged **18-79** with severe or multiple disabilities in BPL households



Family benefit: ₹20,000 upon the death of a breadwinner aged 18-59 in BPL households

Annapurna Scheme: 10kg of food grains per month for senior citizens who are not receiving any pension

- **Issues in the MGNREGA Scheme Observed by the Committee:**

- **Lack of Work Supply:** That too when there was an **increase in the demand** for work under MGNREGA due to economic distress caused by **Covid-19 pandemic**.
- **Delay in the Release of Funds:** It is a huge discouraging aspect and does not go in consonance with the underlying spirit of the scheme.
- **Disparity in Wages in Different States:** The committee noted how it is possible that a single scheme having the provision of **hundred days of guaranteed work** to willing people from the rural settings can have different yardstick when it comes to the payment modalities across the length and breadth of the country.

It is against the Constitutional provision of **equal pay for equal work**.

- **National Social Assistance Programme (NSAP):**

- The National Social Assistance Programme (NSAP) is a welfare programme being administered by the **Ministry of Rural Development**.
- This programme is being implemented in **rural as well as urban areas**.
- The programme was first **launched on 15th August 1995** as a **Centrally Sponsored Scheme**. It was brought within the umbrella of ‘**Core of Core**’ **schemes** of the Centrally Sponsored Schemes (CSS) in 2016.
- Currently, it has **five components** namely:
 - **Indira Gandhi National Old Age Pension Scheme (IGNOAPS)** - since inception of NSAP in 1995.
 - **National Family Benefit Scheme (NFBS)** - 1995.
 - **Annapurna Scheme** - launched in 2000.
 - **Indira Gandhi National Widow Pension Scheme (IGNWPS)** - launched in 2009.
 - **Indira Gandhi National Disability Pension Scheme** - launched in 2009.
- The **National Maternity Benefit Scheme (NMBS)** was part of NSAP and was subsequently transferred from the Ministry of Rural development to the Ministry of Health and Family Welfare.

Source:TH

Group of Ministers: Media Strategy

Why in News

The **Editors Guild of India** flagged the **Group of Ministers (GoM) report** on the **government’s media strategy** as an example of the government's “**increasingly draconian attitude**” towards any criticism.

The GoM, whose members include five Cabinet Ministers and four Ministers of State, was set up in mid-2020.

Editors Guild of India

The Editors Guild was founded in 1978 with the **twin objectives of protecting press freedom** and for **raising the standards of editorial leadership** of newspapers and magazines.

Key Points

Recommendations from Group of Ministers (GoM) Report on Media Strategy:

- **Identifying and engaging journalists** - who had lost jobs but have been “supportive or neutral” to the present government - in various ministries so that their services could be used to project the government’s image positively.
Further, the government should have an **increased engagement with journalism schools** as part of its long-term strategy since present students are future journalists.
- **Engaging with Foreign Media and NRIs:**
 - There should be **regular interaction with foreign media journalists** as part of the government’s global outreach so that “its perspective” is put out correctly in the international forum.
 - An **effective system of communication with the NRI community** should be established so that they can raise their voice against negative narratives in foreign countries.
- **Highlighting Government’s Work:**
 - It calls for **mass circulation of positive stories** and testimonials to highlight the work done by the government and the difference they have made in people’s lives.
And **rebuttal of negative stories**, ensuring advertisements and outreach programmes in regional languages for better ‘connect with local people’.
 - Physical copies of the government magazine, **New India Samachar**, should be distributed to 6 lakh people and the e-version to 8 crore people.
 - Tasking different ministries with different outreach goals.
- **Using Social Media:**
It calls for **engaging with platforms** such as to increase the government’s outreach positively.
- **Countering False Narratives:**
Tracking **50 ‘negative influencers’** who discredit the government & encouraging **50 ‘positive influencers’** who project government work in ‘right perspective’.

Message and the medium

A peek into the strategy to finetune government communication



Action	Responsible unit
Two major public outreach programmes by each Ministry to ensure year-round coverage of government events	All Ministries
Engagement with journalism schools to tap 'future journalists'	I&B Ministry
Curbing fake news through fact check unit to counter false narratives	Press Information Bureau under I&B Ministry
Identifying a pool of 'spin doctors' for better presentation of facts	I&B Ministry
Promoting and supporting online portals to counter existing critical news portals	I&B Ministry
Regular interaction with foreign media journalists to disseminate government perspective	I&B and External Affairs Ministries

Concern of Editors Guild:

- The media strategy illustrates the government's **increasingly draconian attitude** against any critique and inquiry by the press.
The suggestions from the GoM report hint at **increased surveillance and targeting of writers and journalists** who depart from the government's narrative.
- The guild said the GoM prepared its report "with an **embedded toolkit to control the narrative** about the government in the media".
- Among the more disturbing suggestions was to develop a "strategy to neutralise the people who are writing against the government without facts and set false narratives/spread fake news".
Suggestion revealed an intention to "**muzzle any criticism of the government**", in the absence of clarity on what constitutes **fake news**.

Way Forward

- It is supposed that the **government should safeguard constitutional values of freedom of expression** for media as well as journalists and should make it clear that it is committed to the plurality of views in the media.

- Countering content manipulation and fake news to restore faith in the media without undermining its freedom will require public education, strengthening of regulations and effort of tech companies to make suitable algorithms for news curation.
- On the other hand, it is important for the **media to stick to the core principles** like truth and accuracy, transparency, independence, fairness and impartiality, responsibility and fair play so that they can gain credibility.

Source:TH

TRAI Suspends New SMS Scrubbing Norms

Why in News

The **Telecom Regulatory Authority of India (TRAI)** temporarily suspended the scrubbing of short message service or SMS by telecom service providers (TSP) for seven days.

The action by TRAI comes after the functioning of several SMS-based services of banks and e-commerce platforms was affected recently, as the TSPs implemented the second phase of SMS regulation.

Key Points

- **Telecom Commercial Communication Customer Preference Regulation, 2018:**
 - It was issued to “**effectively deal with the nuisance of spam**”.
 - Rules mandate telcos to verify the content of every SMS with the registered text before delivering it to consumers.
 - As per TRAI norms, the content of all SMSes will now be verified before it is allowed to be delivered on the users’ device. This process, **known as scrubbing**, was implemented recently after several delays.
 - The new TRAI regulations for principal entities, which will be allowed to send SMSes to customers, seek registration of senders, telemarketers, headers, content, templates, consent templates and subscriber preference.
 - The rules **prohibit unregistered senders** from initiating commercial messages, while registered companies are prevented from sending fraudulent messages to their customers.
 - TRAI has released a framework under which telcos could use a distributed ledger technology or blockchain to **verify the sender information and content of every commercial SMS** before it was delivered on the user’s device.
 - **Blockchain** will ensure two things i.e, non-repudiation and confidentiality. Only those authorised to access details will be able to access subscriber details and only when they need to deliver service.
 - According to TRAI, the old technology and platform allowed unscrupulous telemarketers to override the stated preference of the subscriber by claiming consent that may have been surreptitiously obtained.
- **Recent Issue:**

Even though TSPs implemented the scrubbing norms, some companies did not adopt them, leading to text messages getting dropped and transaction failures.

 - TSPs followed TRAI regulations and activated the due process of content scrubbing to address the issue of **unsolicited commercial communication**.
 - TSPs had sent various communications to the principal entities to register their content template with TSPs.

Blockchain Technology

- Blockchain is a **shared, immutable ledger** that facilitates the process of recording transactions and tracking assets in a business network.

An asset can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights, branding).
- Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved.

- The initial and primary use of blockchain technology was for monitoring **cryptocurrency** (e.g. bitcoin) transactions. However, other usage and applications have emerged in the last few years.
 - The government of Andhra Pradesh and Telangana have put the **land records on the blockchain technology** owing to its easy traceability feature.
 - Election Commission (EC) officials are exploring the **potential of using blockchain technology to enable remote voting**.

Telecom Regulatory Authority of India

- It was **established by an Act of Parliament** (Telecom Regulatory Authority of India Act, 1997) to regulate telecom services, including fixation/revision of tariffs for telecom services.
- It provides a fair and transparent policy environment which promotes a level playing field and facilitates fair competition.
- The TRAI Act was amended to establish a Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT) to take over the adjudicatory and disputes functions from TRAI.

TDSAT was set up to adjudicate any dispute between a licensor and a licensee, between two or more service providers, between a service provider and a group of consumers, and to hear and dispose of appeals against any direction, decision or order of TRAI.

Source: IE

Vaccine Passports

Why in News

Governments around the world are exploring the potential use of vaccine passports as a way of reopening the economy by identifying those protected against the coronavirus.

Key Points

- **About Vaccine Passports:**

- A vaccine passport is an e-certificate that stores and records jabs and **Covid-19** test status.
 - It can be kept in a smartphone app or in other digital formats.
 - Its contents can be flashed at security checkpoints when people travel across borders.
- The idea is modelled on the proof of **vaccination** that several countries required even before the pandemic.

Travellers from many African countries to the USA or India are required to submit proof that they have been vaccinated against diseases such as **yellow fever**.
- In February 2021, Israel became the first country to introduce a certification system that allows those who have been vaccinated against Covid-19 to access certain facilities and events.

- **Function of Vaccine Passports:**

- Will **digitise vaccination records** across countries.
- Supposed to **function as proof** that the holder has been vaccinated against Covid-19 and is, therefore, safe.

- **Potential Beneficiary of the Vaccine Passports:**

- The primary benefit will be to the **tourism and the hospitality industries**, which are both seen as being at the heart of Covid-19 spread and are the worst hit by the pandemic.
- The **international air travel**, which suffered massively because of the outbreak.

- **Similar Initiative:** Several associations and non-profits have been issuing their own versions for international travel:

- **IATA Travel Pass:** The global trade body representing airlines (**The International Air Transport Association**) is developing an app called IATA Travel Pass that will provide airlines and other aviation industry stakeholders with a common platform to check for the proof of vaccination and its validity.
- **CommonPass:** Non-profit Commons Project has been trying out an app called CommonPass, which contains a passenger's vaccination record.

- **Concerns Raised in Instituting Vaccine Passport:**

- **WHO's Stand:**

- The **World Health Organisation (WHO)** is **against the introduction of Covid-19 vaccination proofs** as a requirement for international travel.
- There are still critical **unknown facts regarding the efficacy of vaccination** in reducing transmission.

- **Lack of Uniformity:** The major difficulty in implementation will be the lack of uniformity across jurisdictions in requirement and issuance of proofs of vaccination.

- **Inadequate Availability of Vaccines:** Preferential vaccination of travellers could result in inadequate supplies of vaccines for priority populations considered at high risk of severe Covid-19 disease.

Introducing a requirement of vaccination as a condition for travel has the potential to **hinder equitable global access to a limited vaccine supply** and would be unlikely to maximize the benefits of vaccination for individual societies and overall global health.

- **Perpetuate Discrimination and Inequality:** Experts argue that vaccine passports, in any form, might make travel inequitable. Adoption of these digital passports can perpetuate discrimination and inequality, increasing the divide between socioeconomic groups.

- Rich countries that have already bought millions of doses from pharmaceutical companies are ahead in the race. The poorer nations may have to wait for months, if not years, to start inoculations.
- This means that if vaccine passports become a norm, then these **lower-income nations will lose out on the advantage.**
- It will lead to exclusion of the younger generation who would be last in line to be vaccinated.

- **Privacy Concerns:** These are mainly digital certificates that are accessed by a particular service provider to check for proof of vaccination, there is a possibility that they would be used by authorities to **track the movement of their holders.**

Source: IE

Uighur Muslims

Why in News

Recently, several hundred **Uighur Muslim** women in Turkey staged an **International Women's Day** march against the extradition agreement of Turkey with China and demanding the closure of **mass incarceration camps in China's Xinjiang Province.**

Earlier in 2020, the **United States House of Representatives approved a legislation** calling for sanctions on Chinese officials responsible for oppression of Uighur Muslims.



Key Points

- **Uighur Muslims:**

- The Uighurs are a predominantly **Muslim minority Turkic ethnic group**, whose origins can be traced to Central and East Asia.

The Uighurs speak their own language, similar to Turkish, and see themselves as culturally and ethnically close to Central Asian nations.

- 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 **Xinjiang region of China**.

- A significant population of Uighurs also lives in the neighbouring Central Asian countries such as **Uzbekistan, Kyrgyzstan and Kazakhstan**.
- **Xinjiang is technically an autonomous region within China** — its largest region, rich in minerals, and sharing **borders with eight countries, including India, Pakistan, Russia and Afghanistan**.

- **Persecution of Uighurs:**

- Over the past few decades, as economic prosperity has come to Xinjiang, it has brought with it in **large numbers the majority Han Chinese**, who have cornered the better jobs, and left the Uighurs feeling their livelihoods and identity were under threat.

This led to **sporadic violence, in 2009** culminating in a riot that killed 200 people, mostly Han Chinese, in the region's capital Urumqi.

- Uighur Muslims for decades, under the **false accusation by the Chinese government of terrorism and separatism**, have suffered from abuses including **persecution, forced detention, intense scrutiny, surveillance and even slavery**.

However, **China claims its camps to be 'educational centres'** where the Uighurs are being cured of "extremist thoughts" and radicalisation, and learning vocational skills.

- China claims that Uighur groups want to establish an independent state and, because of the Uighurs' cultural ties to their neighbours, leaders **fear that elements in places like Pakistan may back a separatist movement in Xinjiang**.

- **China's Extradition Treaty:**

- In December 2020, **China approved an extradition treaty with Turkey** aimed at strengthened judicial cooperation to facilitate a crackdown on transnational criminals including terrorists.

Extradition is the formal process of one state surrendering an individual to another state for prosecution or punishment for crimes committed in the requesting country's jurisdiction.

- The extradition agreement comes amidst **deepening economic and financial ties between Turkey and China**.

China is also Turkey's leading supplier of **Covid-19** vaccines.

- Since 1990, the **Uighur** diaspora in Turkey has become more vibrant and has attracted widespread attention globally through demonstrations, conferences, meetings and briefings.

- **Concerns of Uighur Muslims:**

- **If Turkey ratifies the treaty**, this will be the **last nail in the coffin of Uighur culture** as China will silence the biggest Uighur diaspora outside Xinjiang.
- The treaty will become another **instrument in the hands of China for the prosecution of its enslaved Uighur minority**.

- **India's Stand:**

The Indian government has maintained near silence on the **Uighur** crisis.

Way Forward

- All the countries should reconsider their position and **urge China to immediately stop the persecution of Muslims and the prohibition of Islam in Xinjiang.**
- China must close its “Vocational Training Centers,” release the religious and political prisoners from prisons and detention camps. It should adopt **multiculturalism** and accept the Uighurs and other Turkic Muslims of China as ordinary citizens equal to native Chinese.

Source:IE

Air Independent Propulsion for Diesel Electric Submarines

Why in News

The **Defence Research and Development Organisation (DRDO)** has conducted the final development test of **Air Independent Propulsion (AIP) System**, crucial for diesel electric submarines.

Key Points

- **Air Independent Propulsion (AIP) System:**
 - Submarines are essentially of two types: **conventional and nuclear.**
 - The **conventional submarines use diesel-electric engines**, which require them to **surface almost daily to get atmospheric oxygen** for fuel combustion.
 - If fitted with an Air Independent Propulsion (AIP) system, the submarine will need to take in oxygen only once a week.
 - The indigenously-developed AIP, which is one of the **key missions of the Naval Materials Research Laboratory (NMRL)**, is considered one of the ambitious projects of the DRDO for the Navy.

The project aims at **fitting the technology on** India’s Scorpene class submarine **INS Kalvari** around 2023.
- **Advantages of AIP:**
 - The AIP system based submarines will be required to surface much less frequently, thus **increasing their lethality and stealth multifold.**
 - Diesel-electric submarines require them to come to the surface frequently to charge their batteries, thus their underwater endurance time is less.

‘Air-independent’ propulsion technology helps to **make the diesel generator less dependent on surface air.**
 - While there are different types of AIP systems being pursued internationally, **fuel cell-based AIP of NMRL is unique** as the **hydrogen is generated onboard.**

- **Fuel Cell Based AIP system:**
 - In a **fuel cell** based AIP, an electrolytic fuel cell releases energy by combining hydrogen and oxygen, **with only water as the waste product** ensuring less marine pollution.
 - The cells are highly efficient, and do not have moving parts, thus ensuring that the **submarine has a low acoustic emissions of sound.**

Naval Materials Research Laboratory

- Naval Materials Research Laboratory (NMRL) is **one of the laboratories functioning under DRDO**, pursuing basic research as well as application-oriented technology development in several areas viz. Metallurgy, Polymer, Ceramics, Coating, Corrosion and Electrochemical Protection, Marine Biotechnology, Environmental Sciences.
- It's mission:
 - To develop Air Independent Propulsion (AIP) systems for Naval Submarine & Fuel Cell technologies.
 - To provide scientific solutions for all categories of materials & related technologies for Indian Navy.
 - To undertake research projects on strategic materials for Indian Navy.

Nuclear Submarines versus Conventional Submarines

- The main difference between conventional submarines and nuclear submarines is the **power generation system**. Nuclear submarines (e.g **INS Arihant, INS Akula**) employ nuclear reactors for this task and conventional submarines (e.g **Project-75 and Project-75I Class Submarines**) use diesel-electric engines.
- While **nuclear-powered submarines** are considered as key assets for **deep sea operations**, the **conventional diesel electric** ones are vital for **coastal defence and operations close to the shore.**

Source: IE

Exercise Dustlik-2

Why in News

Recently, the second edition of **India-Uzbekistan** joint military exercise "**Dustlik-2**" started in Chaubatia, Uttarakhand.



Key Points

- **Aim of the Exercise:**

Counter Insurgency (CI) and Counter Terrorism (CT) operations in mountainous, rural and urban scenarios under the **United Nations (UN)** mandate.

- **About the First Edition:**

Took place in Tashkent, **Uzbekistan in November 2019.**

- **Significance:**

Uzbekistan is important to India for security and connectivity to the **Central Asian region** and also Iran, it is also one **alternative India has with respect to Afghanistan.**

Security concerns stemming from the **conflict in Afghanistan** is one of the major challenges for India's involvement in Central Asia.

Joint Military Exercises of India with Other Countries

Name of Exercise	Country
Garuda Shakti	Indonesia
Ekuverin	Maldives
Hand-in-Hand	China
Bold Kurukshetra	Singapore
Mitra Shakti	Sri Lanka

Nomadic Elephant	Mongolia
Shakti	France
Surya Kiran	Nepal
Yudh Abhyas	USA

Sources:TH
