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## News Analysis (14 Jul, 2021)

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### Stringent Nature of UAPA

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#### Why in News

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Recently, the death of **Father Stan Swamy**, a Jesuit priest and tribal rights activist, while in judicial custody, has brought the stringent provisions of **Unlawful Activities (Prevention) Act (UAPA)** into the focus.

- **UAPA** is the **India's main anti-terrorism legislation**, but the law makes it more difficult to obtain bail.
- This difficulty in obtaining bail is being seen as one of the principal reasons for **Fr. Swamy's death** as a prisoner in a hospital and **compromises constitutional liberties**.

#### Key Points

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- **Background of UAPA:**

- In the mid-1960s, in order to **curb the various secession movements**, the Government of India considered enacting a stringent law.
- In March 1967, a **peasant uprising in Naxalbari** imparted a sense of urgency.
- On 17<sup>th</sup> June, 1966, the President had promulgated the **Unlawful Activities (Prevention) Ordinance**.

The ordinance intended to “**provide for the more effective prevention of unlawful activities of individuals and associations**”.

- After initial resistance from the Parliament (owing to its stringent nature), the **Unlawful Activities (Prevention) Act was passed in 1967**.
- The Act provided for declaring an association or a body of individuals “unlawful” if they indulged in any activity that **envisages secession or questions or disclaims the country’s sovereignty and territorial integrity**.
- Prior to the UAPA’s enactment, associations were being declared unlawful under the **Criminal Law (Amendment) Act, 1952**.

However, the Supreme Court held that the provision on bans was unlawful because there was **no judicial mechanism** to scrutinise the validity of any ban.

- Therefore, the UAPA included **provisions for a Tribunal** which has to confirm within six months the notification declaring an outfit unlawful.
- After the **Prevention of Terrorism Act (POTA), 2002**, was repealed, the UAPA was expanded to include what would have been terrorist acts in earlier laws.

- **Current Status of the Act:**

- In its present form, the UAPA has been **amended in 2004 and 2013**, to expand its scope.
- **Expanded Scope of Law:**
  - Punishment for terrorist acts and activities,
  - Acts threatening the country’s security, including its economic security (a term that covers fiscal and monetary security, food, livelihood, energy ecological and environmental security),
  - Provisions to prevent the use of funds for terrorist purposes, including money.
- The ban on organisations was initially for two years, but from 2013, the period of proscription has been extended to five years.
- Further, the amendments aim to give effect to various anti-terrorism resolutions of the **United Nations Security Council** and requirements of the **Financial Action Task Force**.
- In 2019, the Act was amended to empower the **government to designate individuals as terrorists**.

- **Modus Operandi of UAPA:**

Just like other special laws dealing with narcotic drugs and the now-defunct laws on terrorism, the UAPA also modifies the **Code of Criminal Procedure** (CrPC) to give it more teeth. For example,

- A remand order can be for 30 days instead of the usual 15,
- Maximum period of judicial custody before the filing of a chargesheet is extendable from the usual 90 days to 180 days.

- **Controversy Regarding UAPA:**

- **Vague Definition of Terrorist Act:** The definition of a “terrorist act” under the UAPA substantially **differs** from the definition promoted by the **United Nations (UN) Special Rapporteur on the Protection of Human Rights and Fundamental Freedoms while Countering Terrorism**.

UAPA, on the other hand, offers an overbroad and ambiguous definition of a “terrorist act” which includes the death of, or injuries to, any person, damage to any property, etc.

- **Denial of Bail:** The major problem with the UAPA lies in its **Section 43(D)(5)**, which makes it difficult for any accused person to obtain bail.
  - In case, if police have filed the chargesheet that there are reasonable grounds for believing that the accusation against such person is prima facie true, bail cannot be granted.
  - Further, a Supreme Court judgment on this has clarified that the court considering bail should not examine the evidence too deeply, but must go by the prosecution version based on broad probabilities.
  - Thus, UAPA **virtually denies bail**, which is a safeguard and guarantee of the **constitutional right to liberty**.
- **Pendency of Trials:** Given the state of justice delivery system in India, the rate of pendency at the level of trial is at an average of 95.5%.
- **State Overreach:** It also includes any act that is “**likely to threaten**” or “**likely to strike terror in people**”, giving unbridled power to the government to brand any ordinary citizen or activist a terrorist without the actual commission of these acts.

It gives the state authority vague powers to detain and arrest individuals who it believes to be indulged in terrorist activities.
- **Undermining Federalism:** Some experts feel that it is against the federal structure since it neglects the authority of state police in terrorism cases, given that ‘**Police**’ is a state subject under **7<sup>th</sup> schedule of Indian Constitution**.

## Way Forward

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- Drawing the line between individual freedom and state obligation to provide security is a case of classical dilemma.
- It is up to the state, judiciary, civil society, to strike a balance between constitutional freedom and the imperative of anti-terror activities.

## Assam-Mizoram Border Dispute

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### Why in News

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Recently, several IED (Improvised Explosive Device) blasts were carried out inside Cachar district of Assam allegedly by miscreants from Mizoram. These blasts signal the **re-emergence of long-unresolved Assam-Mizoram Border Dispute**.

- The **boundary issue between Assam and Mizoram** has existed since the formation of Mizoram — first as a union territory in 1972, and then as a full-fledged state in 1987.
- In India, Inter-state disputes are multifaceted, besides disputes over boundaries, there are **disputes over sharing of water (rivers)** and migration also impacts the federal polity of India.

### Note

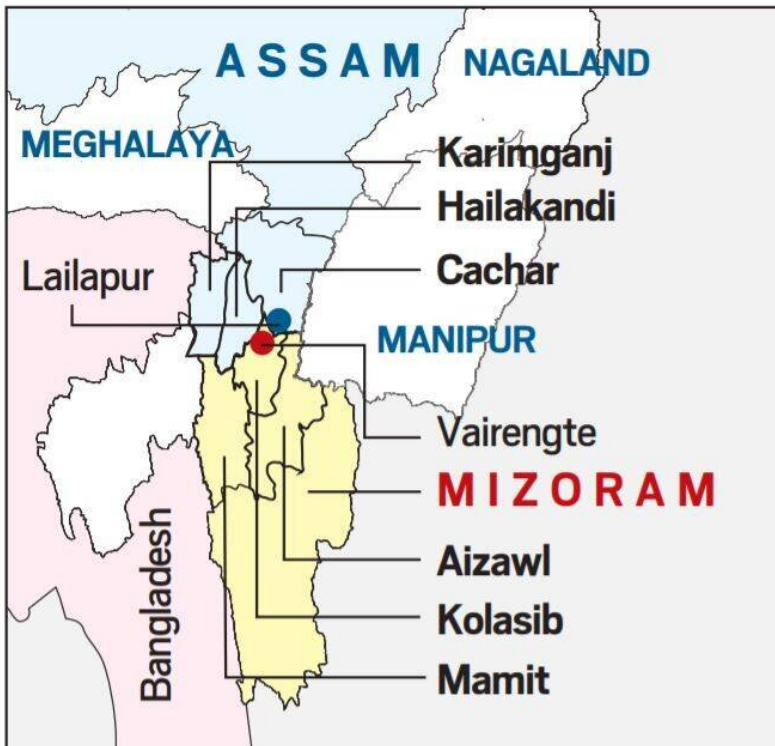
- During colonial times, **Mizoram was known as Lushai Hills**, a district of Assam.
- Mizoram was granted **statehood in 1987** by the State of Mizoram Act, 1986.
- **Assam became a constituent state of India in 1950** and lost much of its territory to new states that emerged from within its borders between the early 1960s and the early 1970s.

### Key Points

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## About:

- The boundary issue between present-day Assam and Mizoram **dates back to the colonial era** when inner lines were demarcated according to the administrative needs of British Raj.
- The Assam-Mizoram dispute **stems from two notifications passed under British era.**
  - First, **notification of 1875**, that differentiated Lushai Hills from the plains of Cachar.
  - Second, **notification of 1933**, that demarcates a boundary between Lushai Hills and Manipur.
- Mizoram believes the **boundary should be demarcated on the basis of the 1875 notification**, which is derived from the **Bengal Eastern Frontier Regulation (BEFR) Act, 1873.**
  - Mizo leaders are against the demarcation notified in 1933, according to them, the **Mizo society was not consulted.**
  - On the other hand, the **Assam government follows the 1933 demarcation.**
  - As a result both states continue to have a **differing perception of the border** and that is the point of conflict.
- There is a **164.6-km inter-state border that separates Assam and Mizoram**, with the three Assam districts of Cachar, Hailakandi and Karimganj sharing a border with Kolasib, Mamit and Aizawl districts of Mizoram.
- Further, the boundary between Mizoram and Assam **follows naturally occurring barriers of hills, valleys, rivers and forests**, and both sides have attributed border skirmishes to perceptual differences over an imaginary line.
- In the **Northeast's complex boundary equations**, clashes between Assam and Mizoram residents are less frequent than they are between other neighbouring states of Assam, like with Nagaland.



#### Overall Condition of Inter-State Disputes in India:

- **Issue of Boundary:** Boundary disputes between the states are one of major reasons for Inter-state disputes in India. For example,
  - **Karnataka and Maharashtra both lay claim to Belgaum**, and every now and then the matter comes up.
  - The **North-Eastern Areas (Reorganisation) Act, 1971**, changed the political map of northeast India, by establishment of the states like Manipur and Tripura and the formation of Meghalaya.
 

However, this reorganisation has resulted in many boundary disputes in the northeastern region, like Assam-Nagaland, Assam-Meghalaya, etc.
- **Issue of Migration:** There have been violent agitations in some states over migrants and job seekers from other states.
  - This is because the existing resources and the employment opportunities are not enough to meet the needs of the growing population.
  - The **'sons of the soil' concept** for preference in employment in the states concerned tends to destroy the roots of a healthy federalism.
- **Disputes over Sharing Water Resources:** The most long standing and contentious inter-state issue has been the **sharing of river waters**.
  - Most of the Indian rivers are inter-state, i.e., they flow through more than one state.
  - Due to an increase in demand for water, a number of inter state disputes over sharing river waters have surfaced.

## Way Forward

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- Boundary disputes between the states **can be settled by using satellite mapping of the actual border locations.**
- **Reviving the Inter-state council** can be an option for resolution of an Inter-state dispute.

Under **Article 263 of the Constitution**, the Inter-state council is expected to inquire and advise on disputes, discuss subjects common to all states and make recommendations for better policy coordination.

- Similarly, **Zonal councils** need to be revived to discuss the matters of common concern to states in each zone—matters relating to social and economic planning, border disputes, inter-state transport, etc.
- India is the epitome of unity in diversity. However, in order to strengthen this unity furthermore, both the centre and state governments, need to imbibe the ethos of **cooperative federalism.**

**Source: TH**

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## Delay in Aadhaar Enrolment due to Incomplete NRC: Assam

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### Why in News

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The **Aadhaar** enrolment of more than 27 lakh people in Assam has become uncertain/delayed because of the delay in completing the process of the **National Register of Citizens (NRC).**

- The **biometrics of these people were frozen after the publication of the NRC in August 2019.**
- The **Centre had earlier been asked to unfreeze the biometrics** since the NRC was yet to be recognised as a document for citizenship.

### Aadhaar

- It is a **12 digit individual identification number** issued by **UIDAI (Unique identification authority of India)** on behalf of Government of India.  
UIDAI is a **statutory authority established in July 2016** by the Government of India under the jurisdiction of the Ministry of Electronics and Information Technology, following the provisions of the **Aadhaar Act 2016.**
- It **serves as identity and address proof** anywhere in India. It is **available in 2 forms, physical and electronic form i.e. (e-Aadhaar).**
- **Any resident** (a person who has resided in India for 182 days, in the one year preceding the date of application for enrollment for Aadhaar) **of India irrespective of age, sex, class can avail it.**

## Key Points

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- **National Register of Citizens:**
  - NRC is a **register prepared in respect of each village**, showing the houses or holdings in a serial order and indicating against each house or holding the number and names of persons staying therein.
  - The **register was first prepared after the 1951 Census of India** and since then it has not been updated until recently.
  - It **has been updated in Assam only** for now and the **government plans to update it nationally** as well.
  - Its **purpose** is to **separate “illegal” immigrants from “legitimate” residents**.
  - Registrar General and Census Commissioner India is the Nodal Agency for NRC.
- **NRC Issue in Assam (Background):**
  - The issue of its update assumed importance as **Assam witnessed large-scale illegal migration from erstwhile East Pakistan and, after 1971**, from present-day Bangladesh.
  - This led to the **six-year-long Assam movement from 1979 to 1985**, for deporting illegal migrants.
  - The movement culminated in the signing of the **Assam Accord in 1985**. It set **25<sup>th</sup> March, 1971**, as the cut-off date for the deportation of illegal migrants.
    - Since the **cut-off date prescribed under articles 5 and 6 of the Constitution was 19<sup>th</sup> July, 1949** - to give force to the new date, an amendment was made to the **Citizenship Act, 1955**, and a new section was introduced. It was made **applicable only to Assam**.
    - **The Assam Accord** was signed between the **All Assam Students Union (AASU)**, the **All Assam Gana Sangram Parishad** and the **Central Government**.
  - A petition was filed in the **Supreme Court (SC)** in **2009** by an **Non-governmental Organization (NGO)** called Assam Public Works demanding the identification and deportation of illegal Bangladeshis in Assam.
  - In December **2014**, a division bench of the **SC** ordered that the NRC be updated in a time-bound manner.
  - In **2018**, the **SC** mentioned the prospect of sample re-verification in an order, saying that it could **consider re-verifying 10% of the names included in the NRC**.
  - In July **2019**, the **state government gave an affidavit in the SC** seeking a **re-verification of 20% included names** in the districts bordering Bangladesh and 10% in the rest of the districts.

However, **it was dismissed** after the erstwhile coordinator of the NRC submitted that re-verification was already done.
  - The Assam government is **firm on its demand of 10-20% re-verification** of the nationality claims made by some of the people included in the final NRC, published in 2019.



- **Current Scenario:**

- The **state government of Assam** has provided the latest data regarding **'foreigner' detection** in the state.
- There is a **need for re-verification** because people of Assam want a **correct NRC**.
- Also, there has been a **delay in issuing the rejection slips** to the over 19 lakh excluded people so that they can move court to claim nationality.
  - Officials have cited the **Covid-19 pandemic** and the **floods** in the state as reasons for the delay.
  - The **rejection slips would carry the reason of rejection, which would differ from person to person** and based on the reason they would be able to challenge their exclusion in the Foreigners' Tribunals.

Every individual, whose name does not figure in the final NRC, can represent his/her case in front of the **Foreigners Tribunals**.

Source: TH

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## **Cabinet Committees**

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### **Why in News**

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After a large-scale rejig at the **Council of Ministers**, Prime Minister effected some changes in Cabinet committees.

### **Key Points**

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- **About:**

- **Eight Cabinet Committees:**

- **Appointments Committee** of the Cabinet.
    - Cabinet Committee on **Accommodation**.
    - Cabinet Committee on **Economic Affairs**.
    - Cabinet Committee on **Parliamentary Affairs**.
    - Cabinet Committee on **Political Affairs**.
    - Cabinet Committee on **Security**.
    - Cabinet Committee on **Investment and Growth**.
    - Cabinet Committee on **Employment & Skill Development**.

- All committees except Cabinet Committee on Accommodation and Cabinet Committee on Parliamentary Affairs are headed by the Prime Minister.

- They are **extra-constitutional** in emergence.

- In other words, they are **not mentioned in the Constitution**. However, the **Rules of Business** provide for their establishment.

- The **executive in India works** under the Government of India **Transaction of Business Rules, 1961**.

- These Rules emerge **from Article 77(3)** of the Constitution, which states:

- “The President shall make rules for the more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business.”

- The Prime Minister constitutes **Standing Committees of the Cabinet** and sets out the **specific functions assigned** to them. He can add or reduce the number of committees.

- In addition to cabinet committees, several **Groups of Ministers (GoMs)** are constituted to look into different issues/subjects.

- **Role of Cabinet Committees:**

- They are an organizational device **to lessen the enormous workload of the Cabinet**. They facilitate an in-depth examination of policy issues and effective coordination. They are **based on the principles of division of labor and effective delegation**.

- They not only resolve issues and frame proposals for the Cabinet’s consideration, but they also take decisions. The Cabinet can, of course, review their decisions.

- **Groups of Ministers:**

- These are **ad hoc bodies** formed to give recommendations to the cabinet on certain emergent issues and critical problem areas.

- Some of these GoMs are empowered to take decisions on behalf of the Cabinet whereas the others make recommendations to the Cabinet.

- The institution of GoMs has become a viable and effective instrument of coordination among the ministries.

- Ministers heading the concerned ministries are inducted into the relevant GoMs and when the advice is crystallised they are disbanded.

Source: TH

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## BHIM - UPI Launched in Bhutan

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### Why in News

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The **Union Minister of Finance of India** along with her counterpart, the **Finance Minister of Bhutan** has jointly launched **Bharat Interface for Money - Unified Payments Interface (BHIM-UPI)** in Bhutan.

The payment system was launched by **NPCI International Payments Ltd. (NIPL)**, the international arm of **National Payment Corporation of India (NPCI)**, in partnership with the **Royal Monetary Authority (RMA)** of Bhutan.



### Key Points

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- **About:**
  - Bhutan is the **first country** to adopt **UPI standards** for its Quick Response (QR) code, and the first country in our immediate neighbourhood to accept mobile based payments through the BHIM App.
  - It is also the **second country after Singapore** to have **BHIM-UPI acceptance at merchant locations**.
  - Bhutan will also become the **only country to both issue and accept RuPay cards as well as accept BHIM-UPI**.

- **Bharat Interface for Money-Unified Payments Interface (BHIM-UPI):**
  - BHIM is developed by the **National Payment Corporation of India (NPCI)**.
  - It is an initiative to enable fast, secure, reliable cashless payments through the mobile phone.
  - BHIM is based on **Unified Payment Interface (UPI)** to facilitate e-payments directly through banks.
  - It is interoperable with other Unified Payment Interface (UPI) applications, and bank accounts.

**Unified Payments Interface (UPI)** is an instant real-time payment system, allowing users to transfer money on a real-time basis, across multiple bank accounts without disclosing details of one's bank account to the other party.

- **Advantages:**
  - The simple, safe, cost-effective mobile-based payments system has become one of the most prominent forms of digital payments.
  - The payment infrastructures of the two countries are seamlessly connected and **will benefit a large number of tourists and businessmen from India who travel to Bhutan each year.**
    - This will enhance the ease of living and ease of travelling through cashless transactions at the touch of a button.
  - In 2020, UPI enabled commerce worth USD 457 billion, which is equivalent to approximately 15% of India's GDP.

## **RuPay Card Scheme**

- RuPay is the first-of-its-kind **domestic Debit and Credit Card payment** network of India.
- The name, derived from the words 'Rupee and 'Payment', emphasises that it is India's very own initiative for Debit and Credit Card payments.
- The card can also be used for transactions in Singapore, **Bhutan**, UAE, Bahrain and Saudi Arabia.

## **National Payments Corporation of India (NPCI)**

- NPCI, an umbrella organisation for operating retail payments and settlement systems in India, is an initiative of **Reserve Bank of India (RBI)** and **Indian Banks' Association (IBA)** under the provisions of the **Payment and Settlement Systems Act, 2007**.
- It is a **"Not for Profit" Company** under the provisions of **Section 25 of Companies Act 1956 (now Section 8 of Companies Act 2013)**, with an intention to provide infrastructure to the entire Banking system in India for physical as well as electronic payment and settlement systems.

**Source: TH**

# Fertiliser Self-Sufficiency

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## Why in News

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Recently, the **Minister of Chemicals and Fertilisers** has reviewed the **initiatives of the Department of Fertilisers** for making India **Atmanirbhar in Fertilisers**.

The **Government** is planning to liberalise **Market Development Assistance (MDA) policy** to promote the use of **alternative fertilisers**.

## Key Points

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- **MDA Policy:**
  - MDA policy was earlier limited to **city compost only**.
  - There were **demands to expand this policy** by incorporating **organic waste** like **Biogas, Green Manure, organic compost of rural areas, solid/liquid slurry, etc.**
  - This expansion will fully complement the **Swachh Bharat Abhiyan**.

- **Government Initiatives and Schemes:**

- **Neem Coating of Urea:**

- The Department of Fertilizers (DoF) has made it mandatory for all the domestic producers to produce **100% urea as Neem Coated Urea (NCU)**.
- The benefits of use of NCU are as under:-
  - Improvement in soil health.
  - Reduction in usage of plant protection chemicals.
  - Reduction in pest and disease attack.
  - An increase in yield of paddy, sugarcane, maize, soybean, Tur/Red Gram.
  - Negligible diversion towards non-agricultural purposes.
  - Due to slow release of Nitrogen, Nitrogen Use Efficiency (NUE) of Neem Coated Urea increases resulting in reduced consumption of NCU as compared to normal urea.

- **New Urea Policy (NUP) 2015:**

Objectives of the policy are-

- To maximize **indigenous urea production**.
- To promote energy efficiency in the urea units.
- To rationalize the subsidy burden on the Government of India.

- **New Investment Policy- 2012:**

The Government announced **New Investment Policy (NIP)-2012** in January, 2013 and made amendments in 2014 to facilitate fresh investment in the **urea sector** and to make **India self-sufficient in the urea sector**.

- **Policy on Promotion of City Compost:**

- The Government of India approved a **policy on promotion of City Compost**, notified by the DoF in 2016 granting Market Development Assistance of Rs. 1500/- for scaling up production and consumption of city compost.
- To increase sales volumes, compost manufacturers willing to market city compost were allowed to sell city compost in bulk directly to farmers.
- Fertilizer companies marketing city compost are covered under the **Direct Benefit Transfer (DBT)** for Fertilizers.

- **Use of Space Technology in Fertilizer Sector:**

DoF commissioned a three year Pilot Study on “**Resource Mapping of Rock Phosphate using Reflectance Spectroscopy and Earth Observations Data**” by National Remote Sensing Centre under ISRO, in collaboration with Geological Survey of India (GSI) and the Atomic Mineral Directorate (AMD).

- **The Nutrient Based Subsidy (NBS) Scheme:**
  - It has been implemented from **April 2010 by the DoF.**
  - Under **NBS**, a **fixed amount of subsidy decided on an annual basis**, is provided on each grade of subsidized Phosphatic & Potassic (P&K) fertilizers depending on its nutrient content.
  - It aims at ensuring the balanced use of **fertilizers, improving agricultural productivity, promoting the growth of the indigenous fertilizers industry** and also reducing the burden of Subsidy.

## Fertilizer Consumption in India

- **India's fertiliser consumption in FY20** was about 61 million tonnes — of which 55% **was urea**—and is estimated to have increased by 5 million tonnes in FY21.
  - Since **non-urea (MoP, DAP, complex) varieties** cost higher, many **farmers prefer to use more urea** than actually needed.
  - The government has taken a number of **measures to reduce urea consumption**. It introduced **neem-coated urea** to reduce illegal diversion of urea for non-agricultural uses. It also stepped up the **promotion of organic and zero-budget farming**.
  - Currently, the fertiliser production of the country is 42-45 million tonnes, and **imports are at around 18 million tonnes.**
- **Subsidy on Urea:** The Centre **pays subsidy on urea to fertiliser manufacturers on the basis of cost of production** at each plant and the units are required to sell the fertiliser at the government-set Maximum Retail Price (MRP).
- **Subsidy on Non-Urea Fertilisers:** The MRPs of non-urea fertilisers are **decontrolled or fixed by the companies**. The Centre, however, pays a flat per-tonne subsidy on these nutrients to ensure they are priced at “reasonable levels”.
  - Examples of non-urea fertilisers: **Di-Ammonium Phosphate (DAP), Muriate of Potash (MOP).**
  - All **Non-Urea based fertilisers are regulated under Nutrient Based Subsidy Scheme.**

**Source: PIB**

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## Post-2020 Global Biodiversity Framework

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### Why in News

The United Nations Convention on Biological Diversity (CBD) has demanded an additional \$200 billion fund flow to developing countries from various sources to manage nature through 2030.

It is one of many demands and targets that have been set through 2030 in the official draft of a new **Global Biodiversity Framework**.

## **Convention on Biological Diversity (CBD)**

- The **Convention on Biological Diversity (CBD)**, a **legally binding treaty** to conserve biodiversity has been in force since 1993. It has **3 main objectives**:
  - The conservation of biological diversity.
  - The sustainable use of the components of biological diversity.
  - The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
- Nearly all countries have ratified it (notably, the **US has signed but not ratified**).
- The **CBD Secretariat is based in Montreal, Canada** and it **operates under the United Nations Environment Programme**.
- The Parties (Countries) under Convention of Biodiversity (CBD), meet at regular intervals and these meetings are called **Conference of Parties (COP)**.
- In 2000, a supplementary agreement to the Convention known as the **Cartagena Protocol on Biosafety** was adopted. It came into force on 11<sup>th</sup> September 2003.

The Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology.
- The **Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS)** was adopted in 2010 in Nagoya, Japan at COP10. It entered into force on 12<sup>th</sup> October 2014.

It not only applies to genetic resources that are covered by the CBD, and to the benefits arising from their utilization but also covers traditional knowledge (TK) associated with genetic resources that are covered by the CBD and the benefits arising from its utilization.
- Along with the Nagoya Protocol on Genetic Resources, the COP-10 also adopted a ten-year framework for action by all countries to save biodiversity.
- Officially known as “**Strategic Plan for Biodiversity 2011-2020**”, it provided a set of 20 ambitious yet achievable targets collectively known as the **Aichi Targets for biodiversity**.
- India **enacted Biological Diversity Act in 2002** for giving effect to the provisions of the CBD.

## **Key Points**

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- **Background:**

- Biodiversity, and the benefits it provides, is fundamental to human well-being and a healthy planet. Despite ongoing efforts, biodiversity is deteriorating worldwide and this decline is projected to continue or worsen under business-as-usual scenarios.
- The post-2020 global biodiversity framework builds on the **Strategic Plan for Biodiversity 2011-2020**.

As the **United Nations Decade on Biodiversity 2011-2020** comes to an end, **IUCN** actively supports the development of what needs to be an ambitious new global biodiversity framework.

- **Purpose:**

- **Guiding Force:** It is a new framework that will be the **global guiding force to protect nature** and to retain its essential services for humans from 2020 to 2030.
- **Setting Targets:** This is a global, outcome-oriented framework for the **Convention's 196 Parties** to develop **national and regional goals and targets**, to update national strategies and action plans as needed, and to facilitate regular monitoring and review of progress at the global level.
- **Urgent and Transformative Action:** The framework **aims to spur urgent and transformative action** by Governments and all of society to contribute to the objectives of the **Convention on Biological Diversity**, its **Protocols**, and other biodiversity related multilateral agreements, processes and instruments.
- **Capacity Building:** It aims to ensure the right capacity building of the communities/governments to take up conservation measures to meet the goals. These include the contentious technology transfer to countries that don't have it currently and also a wide scientific cooperation among countries.

- **Goals and Targets:**

- The new frameworks have **four goals to achieve by 2050**.
  - To **halt the extinction and decline of biodiversity**.
  - To **enhance and retain nature's services** to humans by conserving.
  - To **ensure fair and equitable benefits to all** from use of genetic resources.
  - To **close the gap between available financial and other means** of implementation and those necessary to achieve the 2050 Vision.
- **2030 Action Targets:** The framework has **21 action-oriented targets** for urgent action over the decade to 2030, which includes:
  - To bring at least 30% of land and sea under the world's protected areas.
  - A **50% greater reduction in the rate of introduction of invasive alien species**, and controls or eradication of such species to eliminate or reduce their impacts.
  - **Reducing nutrients lost to the environment by at least half**, and pesticides by at least two thirds, and **eliminating the discharge of plastic waste**.
  - **Nature-based contributions to global climate change mitigation efforts** of at least 10 GtCO<sub>2</sub>e (gigatonnes of equivalent carbon dioxide) per year, and that all mitigation and adaptation efforts avoid negative impacts on biodiversity.
  - Redirecting, repurposing, reforming or eliminating incentives harmful for biodiversity, in a just and equitable way, reducing them by at least \$US 500 billion per year.

- **Relationship with SDGs:**

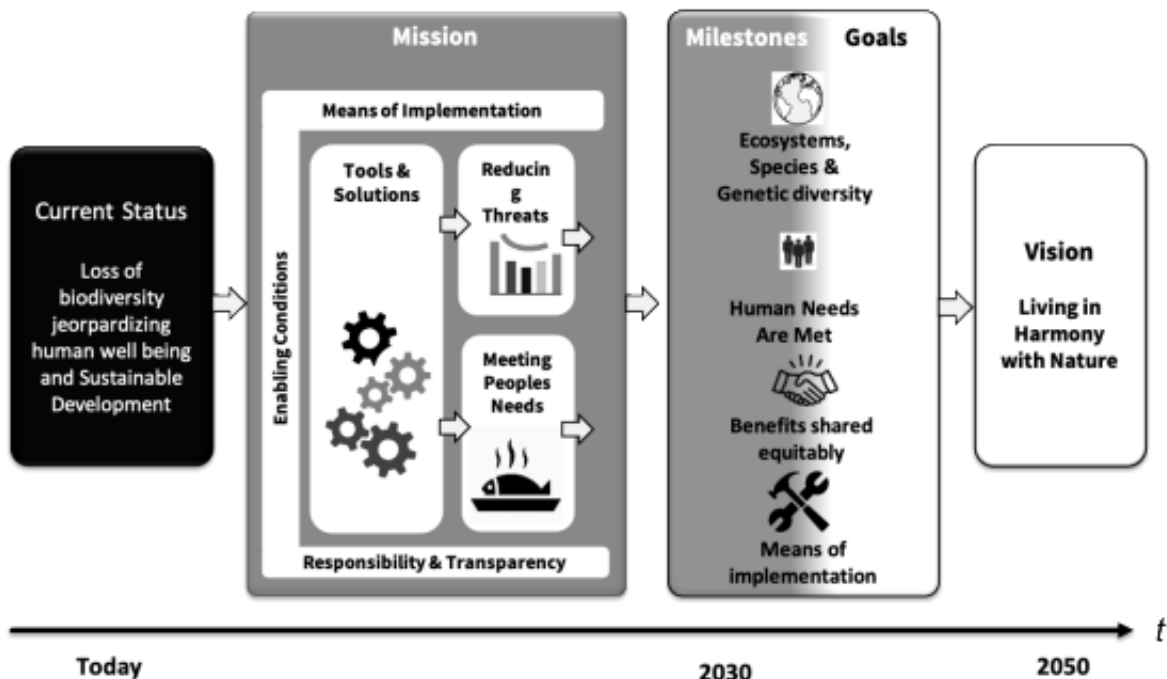
- The framework is a **fundamental contribution to the implementation of the 2030 Agenda for Sustainable Development**.
- At the same time, progress towards the **Sustainable Development Goals (SDGs)** will help to create the conditions necessary **to implement the framework**.

- **Need of Financial Support:**

- The framework's demand for more financial support to developing countries, also the worst victims of biodiversity losses, is the most difficult one to negotiate and achieve.
- Adequate financial resources to implement the framework are available and deployed, progressively closing the financing gap up to at least \$700 billion per year by 2030.
- The financial commitment has to increase to at least \$ 200 billion per year. This includes an additional \$10 billion per year international financial flow to developing countries.

- **Theory of Change of the Framework:**

- The framework is built around a theory of change which recognizes that urgent policy action globally, regionally and nationally is required to transform economic, social and financial models.
- The trends that have exacerbated biodiversity loss will stabilize in the next 10 years (by 2030) and allow for the recovery of natural ecosystems in the following 20 years, with net improvements by 2050 to achieve the Convention’s vision of “living in harmony with nature by 2050”.



Source: DTE

## Suborbital Flight

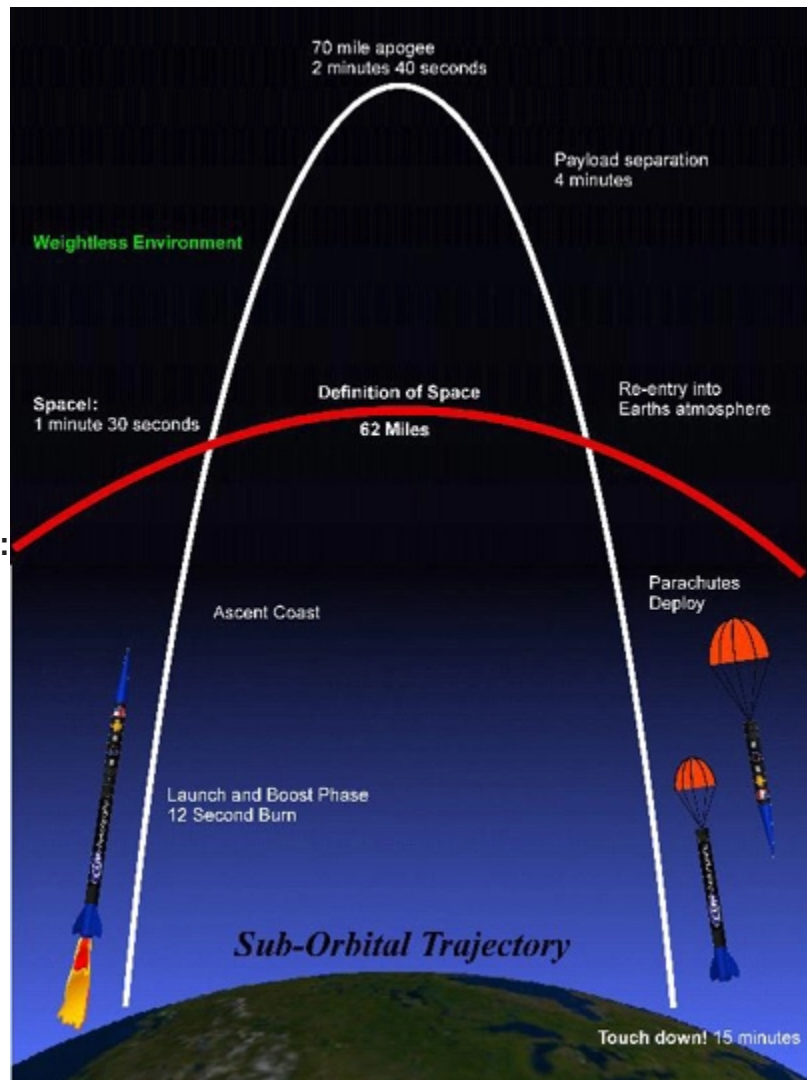
### Why in News

Recently, a six person crew on **Virgin Galactic’s VSS Unity spaceship** undertook a brief trip to the “**edge of space**” which is known as **Suborbital Flight**.

- **Sirisha Bandla, an astronaut born in India**, was a part of the crew. She was the **third woman of Indian origin** to go to space after **Kalpana Chawla and Sunita Williams**.
- **Virgin Galactic** is a British-American **spaceflight company**, operating in the United States.

### Key Points

- **Suborbital Flight/Trajectory:**



- When an **object travels at a horizontal speed of about 28,000 km/hr or more**, it **goes into orbit** once it is above the atmosphere.
  - The **satellites need to reach that threshold speed (orbital velocity)** in order to orbit Earth.
- Such a satellite would be **accelerating towards the Earth due to gravity**, but its **horizontal movement is fast enough to offset the downward motion** so that it moves along a circular path.
- Any object travelling **slower than 28,000 km/hr must eventually return to Earth.**
- Any object that launches to space but **does not reach sufficient horizontal velocity to stay in space falls back to Earth.** Hence they **fly in a suborbital trajectory.**
  - It means that while these **vehicles will cross the ill-defined boundary of space**, they will **not be going fast enough to stay in space** once they get there.

- **Significance of Suborbital Flights:**

- **Increased Access:**

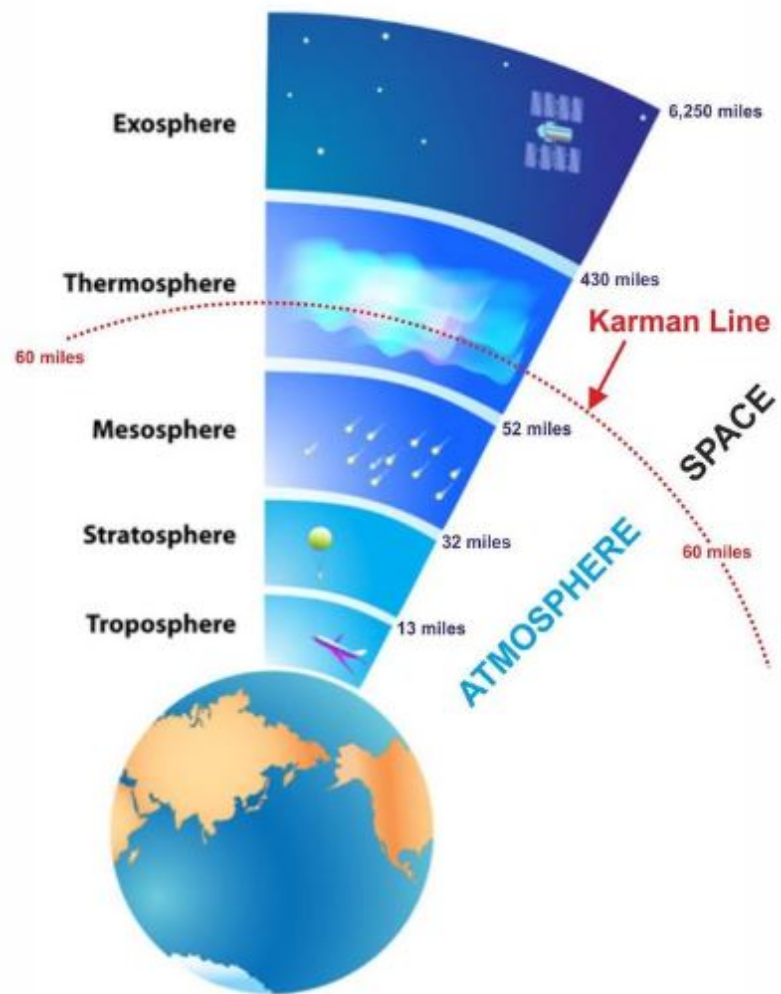
It would provide **increased flight access for design innovation** and experimental manipulation due to high projected flight rates.

- **Research:**

- Suborbital flights will be helpful **for microgravity research**. Microgravity is the **condition in which people or objects appear to be weightless**.
- Suborbital flights **could also be an alternative to parabolic flights** in aeroplanes that space agencies currently use to simulate **zero gravity**.  
**Zero Gravity** or Zero-G can simply be defined as the **state or condition of weightlessness**.

- **Cost Effective:**

They would be **far less expensive** than carrying experiments and people to the **International Space Station**.



- **Edge of Space/Karman Line:**

- The most widely accepted boundary of space is known as the **Karman line**. The **Fédération Aéronautique Internationale (FAI)** defines Karman Line as the altitude of 100 kilometres above Earth's mean sea level.
  - FAI is the world governing body for air sports, and also stewards definitions regarding human spaceflight.
- The Kármán line has been compared to international waters, as there are no national boundaries and human laws in force beyond the line.
- It is named after **Theodore von Karman (1881–1963)**, a Hungarian American engineer and physicist, who was active primarily in aeronautics and astronautics.
  - He was the **first person to calculate the altitude at which the atmosphere becomes too thin to support aeronautical flight** and arrived at 83.6 km himself.
- However, other organizations do not use this definition. **There is no international law defining the edge of space**, and therefore the limit of national airspace.

**Source: IE**

# Few-Electron Bubbles in Superfluid Helium Gas

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## Why in News

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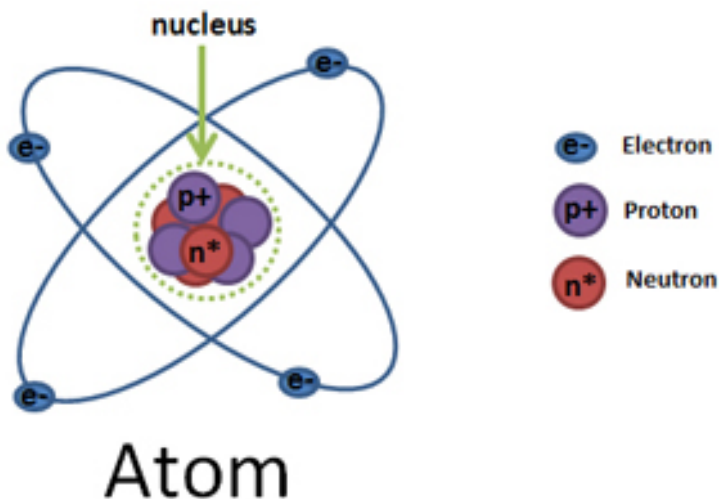
Recently, Scientists at the **Indian Institute of Science (IISc)**, Bangalore for the first time discovered **two species of Few-Electron Bubbles (FEBs) in Superfluid Helium Gas.**

## Helium

- It is a chemical element with the **symbol He and atomic number 2**. The British chemist **Sir William Ramsay** discovered the **existence of helium on Earth in 1895**.
- It is a **colourless, odourless, tasteless, non-toxic, inert, monatomic gas**, the first in the noble gas group in the periodic table.
- Its **boiling point is the lowest among all the elements**.

## Electrons

- **Matter is made up of atoms**, which are the basic units of chemical elements such as hydrogen, helium or oxygen.
- Atoms are **made up of three particles**: Protons, Neutrons and Electrons.
- Hence, **electrons are the subatomic particles that orbit the nucleus of an atom**. They are generally **negative in charge** and are much **smaller than the nucleus of the atom**.



## Key Points

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- **Electron Bubble:**

- An electron bubble is the **empty space created around a free electron in a cryogenic gas or liquid**, such as neon or helium. They are typically very small, about **2 nm in diameter** at atmospheric pressure.
- An electron injected into a **superfluid** form of helium creates a **Single Electron Bubble (SEB)** — a cavity that is free of helium atoms and contains only the electron. The shape of the bubble depends on the energy state of the electron.
  - For instance, the bubble is spherical when the electron is in the ground state (i.e. state of lowest energy). There are also **multiple electron bubbles** that contain **thousands of electrons**.
  - **Superfluidity** is the **frictionless flow and other exotic behaviour observed in liquid helium at temperatures near absolute zero** ( $-273.15^{\circ}\text{C}$ ), and similar frictionless behaviour of electrons in a superconducting solid. In each case the **unusual behaviour arises from quantum mechanical effects**.

- **Few-Electron Bubbles:**

FEBs, on the other hand, are **nanometre-sized cavities in liquid helium containing just a handful of free electrons**. The number, state, and interactions between free electrons dictate the physical and chemical properties of materials.

- FEBs form an interesting system that has both **electron-electron interaction and electron-surface interaction**.
- FEBs were found to be **stable for at least 15 milliseconds** (quantum changes typically happen at much shorter time scales) which would enable researchers to trap and study them.

- **Significance:**

- **Study Properties:**

FEBs can serve as a useful model to study how the energy states of electrons and interactions between them in a material influence its properties.

- **Decipher Phenomenons:**

There are several phenomena that FEBs can help scientists decipher, such as:

- Turbulent flows in superfluids and viscous fluids, or the flow of heat in superfluid helium.
- Just like how **current flows without resistance in superconducting materials** at very low temperatures, **superfluid helium also conducts heat efficiently at very low temperatures**.

**Source: DTE**

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