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#### CONSOLIDATION OF REGIONAL RURAL BANKS IN INDIA

#### Context

 Recently, the Union government has proposed merging regional rural banks, guided by the 'One State-One RRB' strategy.

#### About the Regional Rural Banks (RRBs)

- RRBs were established under the provisions of an Ordinance passed in 1975 and as per the recommendations of the Narasimham Committee on Rural Credit which further led to the passing of the Regional Rural Banks Act in 1976.
- These are Indian Scheduled Commercial Banks operating at regional level in different states of India.
- The Prathama Grameen Bank was the first bank to be established on 2nd October 1975, and the Syndicate Bank became the first commercial bank to sponsor the Prathama Grameen Bank RRB.
- Collectively, these banks had deposits of 6.6 trillion rupees (\$78.46 billion) and advances of 4.7 trillion rupees as of March 31, 2024.

#### **Functions of RRBs**

- Providing banking facilities to rural and semi –urban areas.
- Carrying out government operations like disbursement of wages of MGNREGA workers, distribution of pension etc.
- Providing Para-Banking facilities like locker facilities, debit and credit cards, mobile banking, internet banking, UPI etc.

#### **Ownership of RRBs**

• The equity of the Regional Rural Banks is held by the stakeholders in a fixed proportion. Regional rural banks are:

- 50% owned by the federal government;
  - 35% by sponsor or scheduled banks; and
  - 15% by state governments.

#### **Consolidation of Regional Rural Banks in India**

- Historical Context and Rationale: The consolidation of RRBs began in 2004-05, following the recommendations of the Dr. Vyas Committee (2001). The primary objectives of these consolidations have been to minimise overhead expenses, expand the capital base, and improve the technological infrastructure of RRBs.
  - Initially, there were 196 RRBs, but through three phases of amalgamation, this number was reduced to 43 by the fiscal year 2020-21.
- Current Consolidation Phase: The consolidation plan, prepared by the Ministry of Finance in consultation with the National Bank for Agriculture and Rural Development (NABARD), aims to achieve the goal of 'One State-One RRB'.
  - It is expected to reduce operational costs, enhance capital adequacy, and improve the overall efficiency of these banks.
  - The consolidation will involve merging RRBs across 12 states into unified entities, with states like Andhra Pradesh, Uttar Pradesh, and West Bengal each seeing multiple banks combined under one institution.

#### **Benefits of Consolidation**

- **Operational Efficiency:** By reducing the number of RRBs, the government aims to lower administrative costs and improve the efficiency of banking operations, making the banks more financially sustainable.
- Enhanced Capital Base: Larger, consolidated RRBs will have a stronger capital base, enabling them to better serve the financial needs of rural communities.

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- Technological Advancements: Consolidation will facilitate the adoption of modern banking technologies, which are essential for competing with private sector banks and small finance banks (SFBs).
- Reduced Dependence on Government Infusions: With improved financial stability, RRBs will be less reliant on government capital infusions, which have been substantial in recent years.
- Broader Reach: The consolidation will allow RRBs to expand their reach and impact, providing better financial services to rural populations.
  - It is expected to enhance the ability of RRBs to support small-scale farmers, agricultural labourers, and rural businesses, thereby contributing to the overall development of the rural economy.

#### Challenges in Consolidation:

- Integration Issues: Merging multiple banks involves complex integration processes, including aligning different technological systems and harmonising operational procedures.
- Regional Disparities: Ensuring that the needs of diverse rural regions are met by a single, consolidated entity can be challenging.
- **Employee Adjustments:** The consolidation process may lead to workforce restructuring, which can be a sensitive issue.

#### **Future Outlook**

- The consolidation of RRBs is a strategic move aimed at strengthening the rural banking infrastructure in India.
- By creating larger, more efficient entities, the government hopes to address the competitive disadvantages that RRBs face against private sector banks and SFBs.

 As the consolidation process progresses, it will be crucial to monitor its impact on the financial health of RRBs and their ability to serve rural communities effectively. The success of this initiative will depend on careful implementation and continuous evaluation to ensure that the intended benefits are realised.

#### Conclusion

- The proposed merger of regional rural banks is a strategic move to bolster their financial stability and enhance their ability to serve rural communities.
- By reducing the number of RRBs and creating larger, more efficient entities, the government aims to ensure that these banks can continue to play a vital role in India's rural economy.

#### Source: BS

#### EQUITY INFUSION FOR FOOD CORPORATION OF INDIA

#### Context

 The Cabinet Committee on Economic Affairs (CCEA) has approved an infusion of equity of Rs.10,700 crore for working capital in FY 2024-25 in Food Corporation of India (FCI).

#### **Food Corporation of India**

- The Food Corporation of India was set up under the Food Corporations Act 1964, with authorized capital of Rs. 100 Crores and equity of Rs. 4 Crores.
- **Objectives** of the FCI;
  - Effective price support operations for safeguarding the interests of the farmers.
  - Distribution of foodgrains throughout the country for a public distribution system.

• Strategic food grain stocks: Maintaining satisfactory level of operational and buffer stocks of foodgrains to ensure National Food Security.

#### **Challenges with FCI**

- **Storage Issues:** Insufficient facilities lead to wastage.
- **High Costs:** Expensive procurement, storage, and distribution.
- **Inefficiencies:** Delays, corruption, and leakage in supply chains.
- **Limited Crop Focus:** Over-focus on rice and wheat impacts crop diversity.
- **Financial Strain:** Heavy subsidies create fiscal pressure.

#### **Measures to Boost Effectiveness of FCI**

The Standing Committee on Food, Consumer Affairs, and Public Distribution recommended:

- Decentralized Procurement: Encourage more states to adopt the Decentralized Procurement Scheme to reduce transportation costs and improve local distribution.
- Infrastructure Development: Assist state governments in creating adequate infrastructure for effective procurement and storage of food grains.
- Utilization of Storage Capacity: Maximize the use of FCI-owned storage facilities before resorting to hiring additional storage to minimize costs.
- Construction of Godowns: Expedite the construction of godowns, especially in northeastern states, Jammu and Kashmir, Andaman and Nicobar Islands, and Lakshadweep, to enhance storage capacity.
- **Performance Evaluation:** Conduct regular performance evaluations of the Decentralized Procurement Scheme to identify and address challenges.

#### Ways and Means Advance (WMA)

- The equity has been infused by converting the Ways and Means Advance into equity.
- A Ways and Means Advance (WMA) is a temporary loan given by the government to the FCI to meet mismatches in government receipts and payments.

#### Source: **PIB**

#### RNA EDITING PROMISES TO GO WHERE DNA EDITING CAN'T

#### Context

 A biotechnology company, Wave Life Sciences successfully performed the first clinical RNA editing in humans on two patients with alpha-1 antitrypsin deficiency.

#### What is RNA editing?

- Cells synthesize **messenger RNA (mRNA)** using instructions in DNA and then 'read' instructions from the mRNA to make functional proteins.
  - During this process of transcription, the cell may make mistakes in the mRNA's sequence and based on it produce faulty proteins.
- **RNA editing** is a process where scientists correct errors in mRNA after it's synthesized by the cell but before it's read to produce proteins.
  - This helps prevent the production of faulty proteins that can cause disorders.

#### Adenosine deaminase acting on RNA (ADAR)

- The technique involves a group of enzymes called adenosine deaminase acting on RNA (ADAR).
- ADAR changes parts of mRNA by turning adenosine into inosine, which acts like guanosine.

- This change helps the cell recognize a problem in the mRNA and fix it, allowing the cell to produce normal proteins.
- Scientists use **guide RNA (gRNA) to direct ADAR** to the specific part of the mRNA that needs editing, ensuring precise corrections.

#### α-1 Antitrypsin Deficiency (AATD)

- It is an inherited disorder where patients suffering from AATD, levels of the **protein I-1** antitrypsin build up and affect the liver and the lungs.
- People with AATD affecting the lungs currently go through weekly intravenous therapy for relief.
- Among people where AATD has affected the liver, a **liver transplant** is the sole treatment option.

#### **RNA v. DNA Editing**

- **Safety and flexibility:** DNA editing makes permanent changes to a person's genome and sometimes this can lead to irreversible errors.
  - On the other hand, RNA editing makes temporary changes, allowing the effects of the edits to fade over time.
- CRISPR-Cas9 and other DNA editing tools require proteins acquired from certain bacteria to perform the cutting function, but these proteins can elicit undesirable immune reactions in some cases.
  - RNA editing relies on ADAR enzymes, which already occur in the human body and thus present a lower risk of allergic reactions.

#### **Challenges in RNA Editing**

- **Specificity:** ADARs can perform adenosineinosine changes in both targeted and nontargeted parts of mRNA, or skip the targeted parts altogether.
  - When ADARs don't align with the adenosine of interest, potentially serious side-effects could arise.
- Transient nature of RNA editing: this is also its strength, but individuals will need to be treated repeatedly to sustain the therapy's effects.
- Current methods to deliver the gRNA-ADAR complex use lipid nanoparticles. Both these methods have a limited carrying capacity, meaning they can't transport large molecules very well.

#### Conclusion

• Although RNA editing is still in its early stages, numerous companies globally are

working on developing these methods to treat various diseases.

 With continued research and clinical trials, RNA editing is poised to become an integral part of the gene-editing toolkit in medical practice.

#### Source: TH

## ECO-SENSITIVE AREAS (ESA) IN THE WESTERN GHATS

#### Context

 The Union Government issued the sixth draft notification designating approximately 56,825.7 square kilometers of the Western Ghats as an Ecologically Sensitive Area (ESA) spanning six

states: Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu.



#### About

- The notification aims to protect the rich biodiversity of the Western Ghats by imposing restrictions on activities such as mining, quarrying, and large-scale construction within the ESA.
- It had provided the states a 60-day window seeking their views and objections on the villages demarcated as ESA.

#### **Eco-Sensitive Zone (ESZ)**

• In 2002, it was decided that an area around each Protected Areas, requires to be notified as an Eco-Sensitive Zone for

**creating a buffer** as further protection around Protected Areas (PAs).

- The very purpose of declaring ESZ is to create some kind of "Shock Absorber" for the specialized Ecosystem, such as protected areas or other natural sites.
- Ecologically Sensitive Areas (ESA) have unique biological resources, which require special attention for their conservation.
  - These areas often contain rare or endangered species, critical habitats, unique ecosystems, or vital natural resources that are essential for maintaining biodiversity and ecosystem functions.
- On the basis of proposals and recommendations of the State Government, the Ministry notified the ESZs under the Environment (Protection) Act, 1986.

#### **Need to Declare Western Ghats as ESAs**

- The entire Western Ghats is the second most landslide-prone region of the country after the Himalayas.
- Absence of ESA cover to Western Ghats resulted in continuation of several environmentallyhazardous human activities, including massive deforestation for mining and construction over the years, leading to loosening of soil and affecting hillside stability.
- **Biodiversity:** The Western Ghats are considered one of the **8** "hottest hotspots" of biological diversity in the world.
  - Covering an area just under 6% of India, the Western Ghats contain more than 30% of all plant, fish, herpeto-fauna, bird, and mammal species found in India.
  - Many species are endemic, such as the Nilgiri tahr (Hemitragus hylocrius) and the lion-tailed macaque (Macaca silenus).
  - 50% of India's amphibians and 67% of fish species are endemic to this region.
- The Western Ghats perform important hydrological and watershed functions.
  - Approximately 245 million people live in the peninsular Indian states that receive most of their water supply from rivers originating in the Western Ghats.
- **Conservation:** In 2012, the Western Ghats were inscribed as a **UNESCO World Heritage Site** due to their exceptional biodiversity and ecological value.

 Several areas of the Western Ghats are designated as protected areas, including national parks and wildlife sanctuaries like Silent Valley National Park, Periyar Wildlife Sanctuary, and Agasthyakoodam.

#### **State's Reaction**

- The Chief Ministers argued that the proposed conservation schemes were too restrictive to allow any development work in the hills that run parallel to the western coast.
- Maharashtra and Goa sought a reduction in the extent of ESA within the respective states for allowing development works.
- The then govt in Karnataka urged the Centre in 2022 to withdraw the draft arguing that it would adversely affect the livelihood of the people in the state.
- The illegal mining lobby and tourism industry put pressure on the government to delay the notification.

## PROHIBITED/REGULATED ACTIVITIES ONCE FINAL ESA NOTIFICATION IS IN PLACE

#### PROHIBITED

 Complete ban on mining, quarrying and high polluting (Red category) industries

- New thermal power projects
- > Expansion of existing power

plantsConstruction projects of

20,000 sq m and above

#### REGULATED

Hydro-power projects
 Low-polluting (Orange &

White categories) industries

> All new and expansion of townships, and development projects of 1.5 lakh sq m of built-up area

#### **Recommendations of Committees on Western Ghats**

- Gadgil Report (2011)
  - Recommended declaring the entire Western Ghats as an ESA.
  - Strong focus on **restricting developmental activities** across the region.
  - Three-tier categorization of the region: It created three categories of protection regimes and listed activities that would be allowed in each based on the level of ecological richness and land use.
  - Emphasized forest rights and sustainable livelihoods.
  - The report recommended the creation of a Western Ghats Ecological Authority

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**(WGEA)** at both the national and state levels to monitor and enforce conservation efforts.

- Environmentalists supported, but state governments and industries strongly opposed.
- Kasturirangan Report (High-Level Working Group Report, 2013)
  - Recommended declaring only **37% of** the region as an ESA.
  - Focused on regulating development in identified sensitive areas while allowing more flexibility in other regions.
  - Focused on core ecologically sensitive areas.
  - Focused more on development balance and economic activities.
  - Recognized the importance of sustainable livelihoods, but with less emphasis on forest rights.
  - Argued for strengthening the existing framework of environmental clearances and setting up of a state-ofthe-art monitoring agency.
  - State governments and industries found it more balanced, though some environmentalists felt it was too lenient.

#### Conclusion

- The Western Ghats are inhabited even in the areas categorised as natural landscapes.
- It is not possible to plan for Western Ghats only as a fenced-in wilderness zone.
  - This is the difference between the natural landscapes of a densely populated country like India and the wilderness zones of many other countries.

 Policymakers have to create a fine balance and promote a development that is sustainable in the cultural and natural landscapes.

#### Source: IE

#### PRIOR SANCTION REQUIRED TO PROSECUTE PUBLIC SERVANTS FOR MONEY LAUNDERING

#### Context

 The Supreme Court held that a prior sanction will precede the prosecution of public servants accused of money laundering charges in discharge of official duty.

#### Background

 The Supreme Court dismissed a plea by the Enforcement Directorate (ED), which had challenged a high court verdict that quashed the cognisance order on the agency's complaint against two IAS officers.

The decision reinforced the application of **Section 197(1) of the Code of Criminal Procedure (CrPC)** in PMLA cases.

- Section 197(1) mandates that no prosecution against a public servant can proceed without obtaining prior sanction from the competent authority.
- The provision corresponds to Section 218 of the Bhartiya Nagrik Suraksha Sanhita, 2023.

#### What is Money Laundering?

- **Money laundering is the illegal process** of making large amounts of money generated by criminal activity, such as drug trafficking or terrorist funding, appear to have come from a legitimate source.
  - In terrorism financing the funds were used to procure arms and ammunition and for training the cadres of the violent extremist organization, among other purposes.
- The money from the criminal activity is considered dirty, and the process "launders" it to make it look clean.

#### Prevention of Money Laundering Act (PMLA) 2002

- It was enacted by Parliament of India under **Article 253 of Constitution in 2002** to prevent money laundering and provide for the confiscation of property derived from or involved in money laundering.
- PMLA and the Rules notified there under came into force with effect from **2005**, and it was further **amended in 2009 and in 2012**.
- **Provisions**:
  - Sec. 3 of PMLA defines the offense of money laundering as any process or activity connected with the proceeds of crime and projecting it as untainted property.
  - **Prescribe obligation:** PMLA prescribes the obligation of banking companies, financial institutions and intermediaries for verification and maintenance of records of the identity of all its clients.
    - Empowerment of officers: PMLA empowers Directorate of Enforcement to carry out investigations in cases involving offense of money laundering and also to attach the property involved in money laundering.
    - **Special Courts:** It envisages the designation of one or more courts of sessions as Special Court to try the offenses punishable under PMLA.
    - Agreement for Central Government: It allows the Central Government to enter into an agreement with the Government of any country outside India for enforcing the provisions of the PMLA.

#### Conclusion

- By applying Section 197(1) to PMLA prosecutions, the court created a check against arbitrary or politically motivated prosecutions of public servants.
- It emphasized PMLA's Section 65, which makes the CrPC applicable to PMLA procedures unless inconsistent with PMLA's provisions.

#### Source: IE

#### NEWS IN SHORT

#### **HORN OF AFRICA**

#### Context

• A UN report reveals that over 65 million people in the **Horn of Africa** are food insecure.

#### **About the Horn of Africa**

 Location: It is a geographical region falling within the horn-shaped part of North Eastern Africa that comprises four countries — Ethiopia, Eritrea, Djibouti and Somalia



- There are also broader definitions, the most common of which include all the countries mentioned above, as well as parts or all of Kenya, the Sudan and Uganda.
- Part of the Horn of Africa region is also known as the Somali peninsula; this term is typically used when referring to lands of Somalia and eastern Ethiopia.
- **Geography and climate:** The Horn of Africa, almost equidistant from the Equator and the Tropic of Cancer, is an arid region.
  - Socotra is a small island off the coast of Somalia, in the Indian Ocean, that is considered to be part of Africa.
  - The Horn of Africa is a UNESCO Biodiversity Hotspot.
- Geopolitical and strategic importance: It is situated along the southern boundary of the Red Sea; extending hundreds of kilometres into the Gulf of Aden, Guardafui Channel, and Indian



Ocean, it also shares a maritime border with the **Arabian Peninsula**.

 These geographic facts personify the Horn as a strategic location for regional and global actors.

#### Source: AIR

#### **THADOU COMMUNITY**

#### Context

 Thadou Community has extended support to the BJP-led state government in its move to implement the National Register of Citizens (NRC).

#### About

- The Thadous are one of the oldest and largest non-Naga tribes of Manipur.
  - It has been the single-largest tribe in Manipur consistently since the first census of India in 1881 till the latest census in 2011.
- Language: The Thadou language is part of the Tibeto-Burman family and has several dialectal variations.
- Religion: Historically, the Thadous practiced animistic and nature-worship rituals.
  - Today, Christianity, plays a vital role in shaping the community's social and religious life.
- **Festivals:** Hun-Thadou Cultural Festival.

#### Source: TH

#### UNION CABINET APPROVED PM-VIDYALAXMI SCHEME

#### Context

- The Union Cabinet approved PM Vidyalaxmi, which seeks to provide financial support to meritorious students in their pursuit of higher education.
  - The National Education Policy (NEP) 2020 recommended expanding financial assistance to meritorious students across both public and private higher education institutions in India.

#### PM-Vidyalaxmi scheme

- The scheme is a Central Sector Scheme and facilitates the extension of education loans to students who get admission in the top 860 quality higher educational institutions (QHEIs) of the nation.
- **Benefits:** For loans up to **17.5 lakh**, the student will receive a credit guarantee of **75%**, enabling banks to extend education loans to students.
  - The scheme will provide for students with up to Rs. 8 lakhs annual family income, for 3% interest subvention on loans up to Rs 10 lakh.
- The scheme will be applicable to the QHEIs of the nation, as determined by the National Institutional Ranking Framework (NIRF) rankings, including all HEIs - government and private.
- It will supplement Pradhan Mantri Uchchatar Shiksha Protsahan (PM-USP) Scheme.

#### About Pradhan Mantri Uchchatar Shiksha Protsahan (PM-USP) Scheme

- The scheme provides scholarships to meritorious students from economically weaker sections to support their higher education expenses, helping them access quality education without financial constraints.
- PM-USP prioritizes students from marginalized groups, including those from Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC), promoting equity in higher education.

#### Source: TH

#### CARICOM (CARIBBEAN COMMUNITY)

#### In News

• The second meeting of the India-CARICOM Joint Commission was held recently to review India-CARICOM relations.

#### **About CARICOM**

- About: CARICOM is a regional organization that was established to promote economic integration, cooperation, and coordination of foreign policy among its member states in the Caribbean.
- **Establishment:** In 1973 with the signing of the Treaty of Chaguaramas.



- **Members:** CARICOM has 15 member states and 5 associate members, primarily Caribbean nations, including Jamaica, Trinidad and Tobago, Barbados, Bahamas, and Guyana.
- Secretariat: Georgetown, Guyana

#### Source: PIB

#### INDIA MAKES FORMAL BID TO HOST 2036 OLYMPICS

#### Context

 India has officially submitted a 'Letter of Intent' to the International Olympic Committee's Future Host Commission for hosting the 2036 Olympic and Paralympic Games.

#### About

- If India does manage to win, it will become only the **4th Asian country ever** to host the quadrennial event **after China, South Korea and Japan.**
- Yoga, kho-kho, kabaddi and chess are among the sports likely to be included in India's bid.
- A decision on the host will not be taken before the IOC elections next year.
- India will also have to face competition from Saudi Arabia, Indonesia, Chile Qatar and Turkey, who are positioning themselves as strong contenders to host the event.
- Paris hosted the latest edition of the Olympic and Paralympic Games this year while Los Angeles and Brisbane are set to host the 2028 and 2032 editions respectively.

#### **Olympic Games**

- The Olympic Games are a global sporting event that occurs every four years, with the Summer and Winter Games alternating every two years.
- Origin: The Olympic Games originated in ancient Greece in the 8th century BCE, and were held every four years in Olympia in honor of the Greek god Zeus.
- The first modern Olympic Games were held in Athens, Greece, in 1896.
- **The Olympic motto** is "Citius, Altius, Fortius", which is Latin for "Faster, Higher, Stronger."
- **The Olympic Rings:** The five interlocking rings, each representing a continent (Africa, the Americas, Asia, Europe, and Oceania), symbolize the unity of the world's nations through sport.
- The Olympic Flame: The flame is lit in Olympia, Greece, and then carried to the host city in a

relay before being used to light the cauldron at the opening ceremony.

• The flame symbolizes the continuity and peace that the Games represent.

#### Source: TH

#### **TULIP**

#### Context

 The Union Minister for Social Justice and Empowerment (SJE) launched 'TULIP' (Traditional Artisans' Upliftment Livelihood Programme).

#### About

- Under the TULIP brand, artisans from Scheduled Castes (SC), Other Backward Classes (OBC), sanitation workers, and persons with disabilities will have an e-platform to market their products.
- The goal of TULIP is to **empower marginalized artisans** by providing them with a platform for global exposure and sales of their products through e-marketing.

#### Source: **PIB**

#### UTTARAKHAND LIVABILITY IMPROVEMENT PROJECT

#### In News

- The Government of India and the Asian
  Development Bank (ADB) signed a \$200 million
  loan agreement for Uttarakhand Livability
  Improvement Project.
  - The project aims to improve infrastructure in Haldwani and four other cities (Champawat, Kichha, Kotdwar, and Vikasnagar) by upgrading roads, traffic management, flood management, and water supply systems.

#### About Asian Development Bank (ADB)

- **Founded:** In 1966 with the goal of promoting social and economic development in Asia and the Pacific.
- **Membership:** 68 members (49 from Asia-Pacific, 19 from outside). India is a founding member.
- Assistance: Provides loans, technical assistance, grants, and equity investments to support development in member countries.
- Largest Shareholders (as on 2023):
  - Japan and USA: 15.6% each

- China: 6.4%
- India: 6.3%
- Australia: 5.8%
- Headquarters: Manila, Philippines

Source: PIB

#### **VOSTRO ACCOUNT**

#### **In News**

- The Reserve Bank of India (RBI) is considering expanding the use of rupee vostro accounts, potentially allowing them to support cross-border lending, capital account transactions, and loans to non-resident Indians (NRIs).
  - This move aims to increase the rupee's role in international trade and financial markets, aligning with India's push to internationalize its currency.

#### **About Vostro Accounts**

- A vostro account held by a domestic bank on behalf of a foreign bank, enables foreign institutions to settle forex transactions and make cross-border payments.
- Present status : Currently, India has agreements for Special Rupee Vostro Accounts (SRVAs) with 22 countries, though only arrangements with Russia, Sri Lanka, and the Maldives are active.
  - Despite these initiatives, challenges remain, as Indian exporters often prefer foreign currency to hedge against fluctuations.
- **Future outlook:** The RBI is expected to introduce a new framework within six months to broaden vostro account utility.
  - RBI is examining ways to allow foreign institutions to use rupee holdings for NRI lending, which could integrate the rupee more fully into global finance and support India's economic influence.

#### Source:LM

#### TUNA CLUSTER IN THE ANDAMAN AND NICOBAR ISLANDS

#### In News

 The Ministry of Fisheries has announced the establishment of a Tuna Cluster in the Andaman and Nicobar Islands under the Pradhan Mantri Matsya Sampada Yojana (PMMSY).

#### About Tuna cluster & Significance

- The Andaman and Nicobar Islands offer a prime opportunity for fisheries development, with around 6.0 lakh square km of Exclusive Economic Zone (EEZ) rich in under-exploited sea resources, particularly Tuna and other valued species.
- **Tuna Cluste**r is expected to drive economic growth, improve incomes, and streamline fisheries operations.
- Investments will focus on building partnerships with tuna-fishing nations, stakeholder training, and infrastructure for landing, processing, and export to boost India's global competitiveness in the sector.

#### **About Tuna**

- Tuna are remarkable **migratory fish**, traveling vast distances such as from the Gulf of Mexico to Europe and back to breed.
- They are a vital food source and one of the most commercially valuable fish globally.
- Four main species dominate the market: skipjack (over half of the global catch), yellowfin, bigeye, and albacore.

#### Source:PIB

#### **AGRIVOLTAIC FARMING**

#### Context

 The Seventh Session of the International Solar Alliance (ISA) in New Delhi showcased the practical implementation of Agrivoltaic farming.

#### **About Agrivoltaic Farming**

- Also called **agrisolar or dual use solar**, it is the practice of growing crops **underneath solar panels.**
- The panels are positioned **2-3 metres** off the ground and sit at an angle of **30 degrees** that can be elevated or suspended to allow plants to grow beneath them.
  - This allows enough light/shade and rainwater to reach the crops, as well as providing access for farm machinery and certain crops appear to thrive more when grown in such environments.
- Benefits: It enhances land efficiency, increases crop yield by providing partial shade, and generates additional income from solar energy.

#### Source: AIR

#### MILLIMETER WAVE TRANSCEIVER FOR 5G RURAL CONNECTIVITY

#### Syllabus: GS3/Science and Technology Context

• Centre for Development of Telematics (C-DOT), the R&D centre of the Department of Telecommunications (DoT), has signed an agreement with the IIT Roorkee for the development of **Millimeter Wave Transceiver for 5G Rural Connectivity.** 

#### **Millimeter Wave Transceiver Technology**

- It refers to the use of **electromagnetic waves** in the frequency range of 30 GHz to 300 GHz, which corresponds to wavelengths between 1 millimeter (mm) and 10 mm.
  - It has the ability to support high data transfer rates, high-resolution imaging, and precise sensing capabilities.

- MMW technology is central to the development of 5G and future 6G networks, autonomous vehicles, and advanced radar systems.
- Significance: It will encourage small and medium scale industries to setup their manufacturing units in India which will create job opportunities for engineering graduates.
  - This will also reduce over dependence on semiconductor fabrication industries.
  - The proposed cost for the development of technology is extremely small as against the opportunities it would create.
  - The project also aims to contribute to generate Intellectual Property Rights (IPRs) and develop a skilled workforce to support the emerging millimetre wave/Sub-THz technology for 5G/6G.

#### Source: **PIB**

