MONTHLY

# FACTLY

EXCLUSIVE CURRENT AFFAIRS FOR

# PRELIMS

AUGUST 2018

# Forum|AS
— A C A D E M Y —

*Your FACTLY for August has been sourced from: The Hindu, Indian Express, Times of India, PIB and Different Magazines.*

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## Economy and Social Development

## Security and Defence

## Environment and Ecology

### 1. Farm Household Indebtedness – NABARD Report

- News: The NABARD All India Rural Financial Inclusion Survey 2016-17.
- Facts:



**Mapping farm debt**
Among other things, the NABARD survey measured incidence of indebtedness (IOI), the proportion of households reporting outstanding debt

- Incidence of Indebtedness as per the survey is **52.5%** for agricultural households and **42.8%** for non-agricultural households. All India IOI taking all rural households together is **47.4%**

- Average amount of outstanding debt (AOD) for indebted agricultural households is ₹1,04,602
- Outstanding debt for indebted non-agricultural households is ₹76,731. Overall extent of indebtedness taking all households combined is ₹91,407
- 43.5% agricultural households reported to have borrowed any money from some source or the other
- 60.4% of agricultural households borrowed from institutional sources alone
- 30.3% borrowed from only informal sources and 9.2% of agricultural households borrowed from both sources
- 56.7% of non-agricultural households and 58.6% of all households borrowed from institutional sources

SOURCE: NABARD, SURVEY REFERENCE YEAR: 2015-16

*1 NABARD Survey - Key Findings*

### 2. Draft E – Commerce Policy

- **News**: A task force of the Union Commerce Ministry has submitted the draft National Policy on Electronic Commerce.
- **Facts**:
  - o Drafted on the basis of some of the recommendation from Justice BN Sri Krishna Committee report on Aadhar data privacy



**The key provisions**
- ▶ Large e-commerce firms should phase out discounts within two years
- ▶ E-commerce companies have to store consumer data within India
- ▶ Competition Commission of India may have to amend current thresholds, study potentially competition-distorting M&As
- ▶ 49% FDI in the inventory model for Indian e-commerce firms
- ▶ Independent e-commerce regulator will deal with consumer complaints, compliance with FDI caps
- ▶ Tax incentives for data localization and infrastructure status for data centres

*2 Provision Draft E-Commerce Policy*

- **Additional Facts:**
  - o **e-Commerce –** also known as electronic commerce or internet commerce is an activity of buying and selling of good and services via the medium of internet.
  - o **Types of e-Commerce – 6 basic types of e-Commerce**
    - ▪ **Business to Business (B2B) -** encompasses all electronic transactions of goods or services conducted between companies. A company selling its products to whole sellers. E.g. A company securing A4 sheets for office Xerox purposes using IndiaMART.

- **Business to Consumer (B2C) -** encompasses all electronic transactions of goods or services conducted between a company and final consumer. Can be called as retail section of e-commerce. E.g. you purchasing an item from Flipkart.
- **Consumer to Consumer (C2C) -** encompasses all electronic transactions of goods or services conducted between consumers. Require a third party platform for online transactions.
- **Consumer to Business (C2B) -** A large number of individuals make their services or products available for purchase for companies seeking precisely these types of services or products. very common in crowdsourcing based projects. e.g. fiver.com
- **Government to Business (G2B) -** encompasses all transactions conducted online between companies and public administration.
- **Government to Citizen (G2C) -** encompasses all electronic transactions conducted between individuals and public administration.
    - e.g. Social Security - through the distribution of information, making payments, etc.
    - Taxes - filing tax returns, payments, etc.
  - **Models of e-Commerce**
    - **Market Place Model -** Marketplace model of e-commerce means providing of an technology platform by an e-commerce entity on a digital and electronic network to act as a facilitator between buyer and seller. E.g. Flipkart and Amazon.
      - Government has allowed **100% foreign direct investment (FDI)** in online retail of goods and services under the **"marketplace model"** through the automatic route
    - **Inventory Model -** Inventory based model of e-commerce means an e-commerce activity **where inventory of goods and services is owned by e-commerce entity** and is sold to the consumers directly. E.g. Alibaba

## 3. Collegium

- **News**: The Centre has cleared the elevation of Justice K.M. Joseph to the Supreme Court after second recommendation by collegium after rejecting the first recommendation.
- **Facts**:
  - **Collegium** – a collection of Chief Justice of India along with 4 senior most Supreme Court judges (before 1999 3 judges formed collegium) that takes decisions related to appointments and transfer of judges in supreme court and high court
  - Collegium has its genesis in **Three Judges Case.**
    - **S.P. Gupta case (December 30, 1981) or The First Judges case**: The ruling gave the Executive primacy over the Judiciary in judicial appointments for the next 12 years
    - **Supreme Court Advocates on Record Association versus Union of India or The Second Judges Case**: verdict gave back CJI's power over judicial appointments and transfers. It says the CJI only need to consult two senior-most judges.
    - **Special Reference case of 1998 or The Three Judges Case:** On a reference from former President K.R. Narayanan, the Supreme Court lays down that the CJIs should consult with

a plurality of four senior-most Supreme Court judges to form his opinion on judicial appointments and transfers

- **Fourth Judges Case (2015) –** strike down of NJAC (99th Amendment), stating collegium remains the basic structure of the Constitution.

## 4. Article 35 A

- **News**: Final verdict by the Supreme Court is awaited on a special constitutional provision - Article 35A

- **Facts**:

  o **Art. 35A –**

    - Provision incorporated in the **Indian Constitution in 1954 by an order of the then President** Rajendra Prasad on the advice of the Jawaharlal Nehru Cabinet.

    - Presidential order was issued **under Art 370(1)(d) of Indian Constitution**. Art 35A **features in the appendix** of the constitution and **not in the body text**.

    - Was an outcome of **Delhi Agreement** between JLN and then PM of J&K Sheikh Abdullah.

    - Delhi agreement **extended Indian Citizenship to state subjects of Kashmir**.

    - Art. 35A empowers legislature of J&K to decide who all are the permanent residents and confer them with special rights and privileges in jobs, education, property education and public welfare.

    - The issue:

      - The parliamentary route of law-making was bypassed when the President incorporated Article 35A into the Constitution.

      - Article 35 A is against the "very spirit of oneness of India" as it creates a "class within a class of Indian citizens"

- **Additional Facts**:

  o Presidential Order: Under Art 370(1)(d) which states no provision of the Constitution of India would apply to the State of J&K, unless the President of India notifies its application to the State and while doing so, the President is empowered to apply the provision with such " exceptions" and "modifications" as the President may notify.

**Note to Student:** *Read Article 370, Article 123 (ordinance powers of the president), Delegated legislation and Executive order.*

## 5. DNA Technology (Use and Application) Regulation Bill, 2018

- **News:** The DNA Technology (Use and Application) Regulation Bill, 2018 has been introduced in India's Parliament

- **Facts:**

  o This has come to forefront with view of creating a national database of DNA for use by the police in solving crimes and identifying missing persons.

  o The bill seeks to use and application of DNA technology to support and strengthen the justice delivery system.

  o Provisions of the Bill:

    - **DNA Regulatory Board:** The Bill provides for the establishment of a DNA Regulatory Board, which will supervise the DNA Data Banks and DNA Laboratories.

- **DNA Databank**: The Bill provides for the establishment of a National DNA Data Bank and regional DNA Data Banks, for every state, or two or more states. The National Data Bank will store DNA profiles received from DNA laboratories and receive DNA data from the regional Banks. Every Data Bank will be required to maintain indices for the following categories of data:
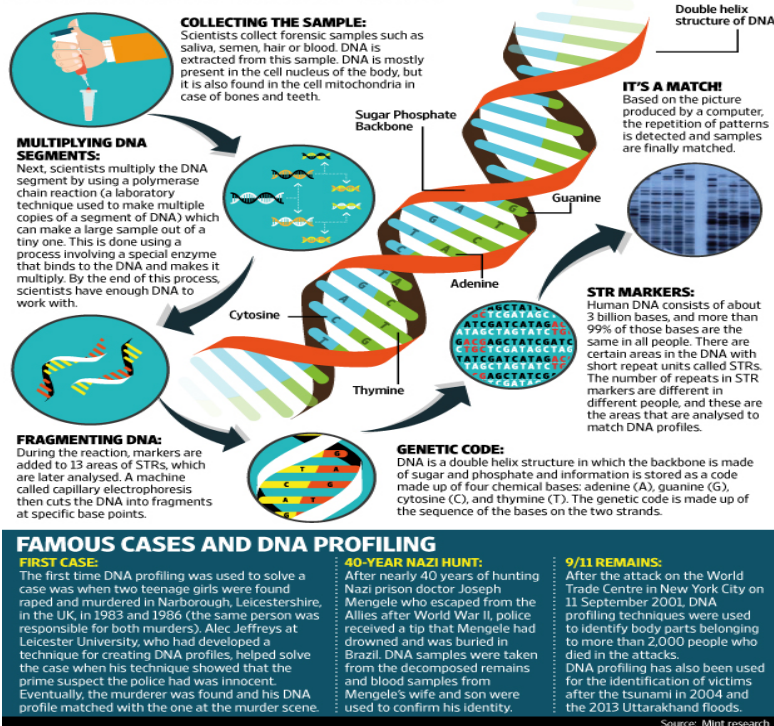
- (i) a crime scene index, (ii) a suspects' or undertrials' index, (iii) an offenders' index, (iv) a missing persons' index, and (v) an unknown deceased persons' index.

- The bill also deals with use of DNA data, retention of DNA data, protection of information.

- **Additional Facts**:

  o **DNA**: deoxyribonucleic acid, is the hereditary material in living beings. Nearly every cell in a person's body has the same DNA. Most DNA is located in the cell nucleus (nuclear DNA), but a small amount of DNA can be found in the mitochondria (mitochondrial DNA or mtDNA). The information in DNA is stored as a code made up of four chemical bases: adenine (A), guanine (G), cytosine (C), and thymine (T).



*3 Process of DNA Profiling*

  o **DNA Profiling**: also known as DNA fingerprinting DNA profiling is the process where a specific DNA pattern, called a profile, is obtained from a person or sample of bodily tissue

## 6. Presidential Assent to State Bills

- **News**: Punjab's Sacrilege Law seeking to Amend Indian Penal code awaits President assent.
- **Facts**:
  o **Article 200** provides that when a Bill passed by the State Legislature, is presented to the Governor, the Governor shall declare— (a) that he assents to the Bill; or (b) that he withholds assent therefrom; or (c) that **he reserves the Bill for the President's consideration**.
  o **Presidential Assent-** A Bill relating to a subject enumerated in the Concurrent List, to ensure operation of its provisions despite their repugnancy to a Union law or an existing law, requires President's assent in terms of **Article 254(2)**.
  o During previous attempt to pass similar legislation in 2016, President had refused to grant assent after Centre had raised objections to these Bills saying punishment of life imprisonment could not

be limited to the desecration of the holy book of just one religion and should instead be for all religions.

## 7. Proxy Voting by NRIs

- **News:** Lok Sabha passed a Bill that proposes to allow **non-resident Indians to use proxies to cast votes** on their behalf in Indian elections.
- **Facts:**
  - **Proxy Voting** - Under proxy voting, a registered elector can delegate his voting power to a representative.
  - **The Representation of the People (Amendment) Bill, 2017**, proposes to amend Section 60 and extend the facility of proxy voting to Indian voters living abroad.
  - The current (Registration of Electors Rules, 1960) stipulates the **physical presence of the overseas electors** in the respective polling station in India on the day of polling.
- **Additional Facts:**
  - **Right to Vote:** is a legal right and not a constitutional right.
  - **Why:** Universal Adult Franchise though mentioned in Art 326 of the Indian Constitution, the conditions on who can vote and who can't are defined by the Representation of the People Act, 1951.

## 8. Protected Areas Permit

- **News:**
  - The Manipur People's Protection Bill 2018, a long-pending demand, especially of the dominant Meiti community of the valley, was passed in the state assembly.
  - Foreigners no longer need a Restricted Areas Permit (RAP) to visit 29 inhabited islands in the Andaman and Nicobar chain.
- **Facts:**
  - **The Manipur People's Protection Bill 2018**
    - The Bill seeks to **regulate the entry and exit of 'outsiders' much like inner line permit (ILP).**
    - Manipur people include Meitis, the Pangal Muslims, scheduled tribes as listed under the Constitution in terms of Manipur and all those citizens of India who have been living in Manipur before 1951.
  - **Andaman Access eased:**
    - Citizens of Afghanistan, China and Pakistan and foreign nationals having their origin in these countries would continue to require RAP to visit the Union Territory
    - For visiting Mayabunder and Diglipur, citizens of Myanmar will continue to require RAP
    - This has been done to promote tourism.
- **Additional Facts**:
  - **Restricted Area Permit (RAP):** is an official travel document mandated by The Foreigner (Protected Areas) Act and issued by the Government of India to allow inward travel of an foreigner/alien citizen into a protected area for a limited period.

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- o **Inner Line Permit (ILP):** is an official travel document issued by the Government of India to allow inward travel of an Indian citizen into a protected area for a limited period. It is obligatory for Indian citizens from outside those states to obtain a permit for entering into the protected state.
- o **Protected Areas in India:**
  - ▪ (i) Whole of Arunachal Pradesh, (ii) Parts of Himachal Pradesh, (iii) Parts of Jammu & Kashmir, (iv) Whole of Manipur, (v) Whole of Mizoram, (vi) Whole of Nagaland, (vii) Parts of Rajasthan, (viii) Whole of Sikkim (partly in Protected Area and partly in Restricted Area), (ix) Parts of Uttarakhand

## 9. Varieties of Democracy Report

- News: **University of Gothenburg (Sweden**) has recently published the **"Varieties of Democracy Report" (V-Dem) f**or 2018.
- **Facts**:
  - o India has been classified among **"flawed democracies" with 42nd rank** on the Democracy Index and it has moved down from 32nd place last year.
  - o The report provides for global examination of democracy.
  - o Countries are classified into 4 categories as
    - ▪ **Liberal democracy** - This category is the ideal benchmark, and every citizen in such societies is guaranteed equal rights and full freedom of expression.
    - ▪ **Electoral democracy** - In this category, all citizens have the vote but certain categories of people suffer exclusion due to their socio-economic status.
    - ▪ **Electoral autocracy** - In this category of nations, all citizens have the vote but repression, censorship and institutionalised intimidation are very visible.
    - ▪ **Closed Autocracy** - While electoral Autocracy do have severe problems, they are still better off than countries that are classified as closed autocracies.
  - o India retains a system of free & fair multi-party elections and thus, qualifies as an **electoral democracy.** But it has seen **major erosion** in indicators such as **Freedom of Expression, Rule of Law and Freedom of Association**.

## 10. Constitution (123rd Amendment) Bill, 2017

- **News**: Lok Sabha has passed Constitution **123rd Amendment Bill, 2017.**
- **Facts**:
  - o Bill seeks to give **constitutional status** to National Commission for Backward Classes.
  - o It seeks to insert new **Article 338B** in the constitution which provides for NCBC, its composition, mandate, & functions.
  - o **Article 342-A** which empowers the president to notify the list of socially and educationally backward classes of that state / union territory. In case of a state, President will make such notification after consultation with the Governor.
- **Additional Facts:**
  - o Pursuant to Supreme Court verdict in **Indra Sawhney & Ors. Vs. Union of India 1992** Government of India enacted the National Commission for Backward Classes Act, 1993 for setting up a Commission at National Level as a permanent statutory body.

o **Part XX (Article 368)** deals with the power of the Parliament to amend the constitution.

## 11. Arbitration and Conciliation (Amendment) Bill, 2018

- **News**: The Lok Sabha has passed Arbitration and Conciliation (Amendment) Bill, 2018.
- **Facts**:
  o It seeks to amend the Arbitration and Conciliation Act, 1996.
  o The Bill establishes **ACI (Arbitration Council of India)** as an independent body for the promotion of arbitration, mediation, conciliation and other alternative dispute redressal mechanism.
  o The Chairperson of ACI will be **either Judge of Supreme Court or Judge of High Court or Chief Justice of High Court or eminent person with expert knowledge in the conduct of the arbitration**
  o The Bill allows the Supreme Court **(for international commercial arbitration)** and High Courts **(for domestic arbitration)** to designate arbitral institutions, which parties can approach for the appointment of arbitrators.
  o The bill will help India become the **hub for domestic and global arbitration** for settling commercial disputes.
  o High Level Committee chaired by a retired judge of the **Supreme Court Justice B.S. Srikrishna** proposed the amendments to the Bill.

- **Additional Facts**:
  o **Alternate Dispute Redressal Mechanism (ADRs):**
    ▪ is capable of providing a substitute to the conventional methods of resolving disputes
    ▪ offers to resolve all type of matters including civil, commercial, industrial and family etc.
    ▪ uses neutral third party who helps the parties to communicate, discuss the differences and resolve the dispute.
  o **Lok Adalats**: one of the ADRs called **'People's Court'** presided over by a **sitting or retired judicial officer**, social activists or members of Legal profession as the chairman.
    ▪ **statutory status** under the Legal Services Authorities Act, 1987
    ▪ deemed to be a **decree of a civil court** and is final and binding on all parties and no appeal against such an award lies before any court of law
    ▪ Any case **pending in regular court** or any dispute which has **not been brought before any court of law** can be referred to Lok Adalat
    ▪ Parties are in direct interaction with the judge, which is not possible in regular courts.
  o **Other Methods of ADRs**



### The various methods of resolving disputes

| Method | Brief description |
|---|---|
| • Negotiation | • The parties themselves |
| • Mediation | • The parties with the help of a neutral third party |
| • Conciliation | • As above, but a neutral third party plays an active role in suggesting a solution |
| • Arbitration | • The parties agree to let a third party make a binding decision |
| • Litigation | • The parties go to court (and therefore a judge) or tribunal (panel) |

NB all of the above except litigation are commonly referred to as ADR, or alternative methods of dispute resolution, i.e. alternative to litigation

*4 Methods of ADR*

## 12. International year of Millets

- **News:** Government has approved **2018 as National Year of Millets.**
- **Facts:**
  - It will help in promotion of production and consumption of millets
  - It will contribute to the fight against targeted hunger and mitigate the effect of climate change in the long run.
- **Additional Facts**:
  - Millets are **smart food** and good for consumers, farmers and planet and have untapped uses such as food, feed, biofuels and brewing.
  - Millets are basically **small-seeded grasses** that are often termed **nutri-cereals or dryland-cereals**.
  - It mainly includes sorghum, ragi, pearl millet, small millet, proso millet, foxtail millet, barnyard millet, Kodo millet etc.
  - They are **adapted to harsh environment of semi-arid tropics**.
  - They require **low or no purchased inputs**, thus they are the **backbone for dryland agriculture.**
  - They have **balanced amino acid profile**, **crude fibre** and **minerals** such as Iron, Zinc, and Phosphorus.
  - They help in curing **Pellagra** (niacin deficiency), **Anaemia** (iron deficiency), B-complex vitamin deficiency etc.
  - Millets are **photo-insensitive** and resilient to **climate change**. They have low carbon and water footprint, hence **environment friendly**.

## 13. SC and ST (Prevention of Atrocities) Amendment Bill, 2018

- **News:** The Rajya Sabha has passed the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Amendment Bill, 2018.
- **Facts:**
  - It states that the investigating officer will **not require the approval of any authority** for the arrest of an accused. This has **overturned Supreme Court Verdict** which necessitated approval from Senior Superintended of Police (SSP) before arrest.
  - A **preliminary enquiry will not be required** for the registration of a FIR against the accused. This provision also overturns SC verdict.
  - The SC/ST Act 1989 states that persons accused of committing an offence under the Act **cannot apply for anticipatory bail**. The Bill seeks to clarify that this provision will apply despite any judgments or orders of a court that provide otherwise

> *Note to Student: Study the provisions of SC and ST (Prevention of Atrocities) Amendment Act 2015*

## 14. Longitudinal Ageing Study in India (LSAI)

- **News:** The Union **Ministry of Health & Family Welfare** has launched the **Longitudinal Ageing Study in India (LASI)**
- **Facts**:
  - It would be used to **develop a scientifically validated data needed for elderly health, economic and social analysis** of the older population and for **framing an evidence-based policy** for elderly citizens
  - It is jointly funded by the **Ministry of Health and Family Welfare**, **United Nations Population Fund - India** and **United States National Institute on Ageing**.

### 15. Open Defecation Free Plus (ODF+) and ODF ++

- **News**: **Ministry of Housing & Urban Affairs (MoHUA)** is set to launch the **Swachh Survekshan 2019**
- **Facts**:
    - **Swachh Survekshan 2019:** ranking exercise under Swachh Bharat Mission Urban
    - ODF+ and ODF++ protocols has been brought because urban India is poised to become ODF before the end of mission period, and there is need to consolidate the achievements to make it sustainable and address the issue of holistic sanitation.
    - **SBM ODF+:** focuses on sustaining community/ public toilet usage by ensuring their functionality, cleanliness and maintenance
    - **SBM ODF ++:** will focus on achieving sanitation sustainability by addressing complete sanitation value chain, including safe containment, processing and disposal of faecal sludge and septage.
    - **Swachh Manch:**
        - Web based platform bringing all the stakeholders of Swacch Bharat Mission on one platform.
        - **enable uploads of pictorial evidence of** citizens and organizations
        - will also be **integrated with the existing Swachhata App** to act as a citizens' grievance redressal platform

### 16. Sustainable Development of Islands in India:

- **News**: NITI Aayog will host an I**nvestors' Conference at Pravasi Bharatiya Kendra** for the Holistic Development of Islands.
- **Facts**:
    - Government in June has constituted a new body, Islands Development Authority to look into sustainable development of Islands. Home minister is the ex-offcio chairman of the body.
    - NITI Aayog has been mandated to steer the holistic development of islands program in partnership with state/UT administration.
    - The government has chosen 10 islands in Lakshadweep and Andaman and Nicobar for their holistic development in the first phase

## 1. Child welfare

### A. PENCIL Portal

- **News**: Question in Lok Sabha on Child Labour Issues in India.
- **Facts**:
    - An electronic platform that bring all the stakeholders together to achieve **child labour free society.**
    - It strives for effective implementation of **Child Labour Act** and **National Child Labour Project (NCLP)** Scheme
    - Developed by **Ministry of Labour and Employment**
- **Additional Facts**:
    - This legal framework of Child Labour Act and NCLP Scheme will achieve the Sustainable Development Goal (SDG) of eliminating child labour by the year 2025:
    - SDGs related to **Child Labour**
        - **Goal 8**: Promote inclusive and sustainable economic growth, employment and decent work for all
            - **8.7**: Take immediate and effective measures to eradicate **forced labour**, **end modern slavery** and **human trafficking** and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
        - **Goal 16**: Promote just, peaceful and inclusive societies
            - **16.2:** End abuse, exploitation, trafficking and all forms of violence and torture against children

## 2. Culture

### A. Swadesh Darshan Scheme – North East Circuit

- **News**: Inauguration of first project under the Swadesh Darshan scheme the '**North East Circuit: Imphal & Khongjom'** in Manipur.
- **Facts:**
    - flagship scheme of **Ministry of tourism** for development of thematic circuits in the country.
    - it also seeks to build sustainable infrastructure to boost the tourism.
    - **Tourist Circuit** is defined as a route having at least three major tourist destinations which are distinct and apart.
- **Additional Facts**:
    - **Kangla Fort, Imphal:**
        - Served as the seat of power of Manipur till 1891
        - The old Govindajee Temple is located in the fort
    - **Khongjom**:
        - Place where the last war of resistance of Anglo Manipur War of 1891 was fought
    - **Circuits under Swadesh Darshan Scheme**
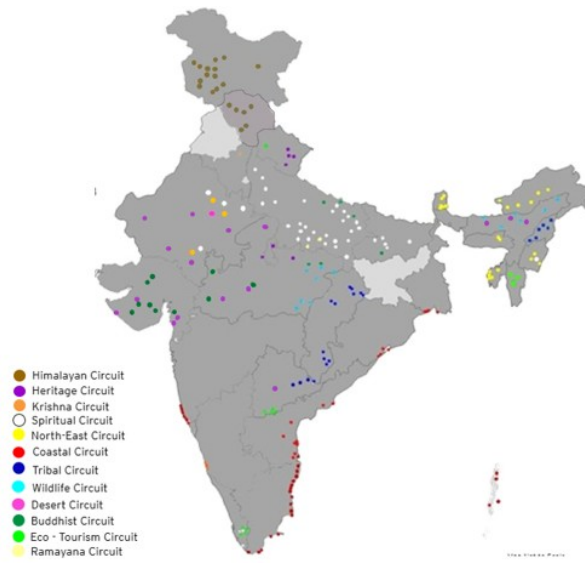
*5 Tourist Circuits Under Swadesh Darshan Scheme*

### 3. Technology

#### A. O – SMART Scheme

- **News**: Cabinet Committee on Economic Affairs (CCEA) has approved umbrella scheme 'O-SMART' of **Ministry of Earth Sciences**.
- **Facts**:
    - Seek to encompass number of projects addressing **ocean development**.
    - The scheme will help in addressing **Sustainable Development Goal – 14,** which aims to conserve use of oceans, marine resources for sustainable development.

### 4. Water and River

#### A. North Koel Reservoir Project

- **News:** Union Cabinet has given its approval to complete the balance works of the North Koel Reservoir Project in **Jharkhand and Bihar**
- **Facts**:
    - It is an irrigation project to cater to drought prone areas areas of **Palamu & Garhwa districts** in Jharkhand and **Aurangabad & Gaya** districts in Bihar
    - It seesk to reduce the submergence and to protect **Betla National Park** and **Palamau Tiger Reserve**.
- **Additional Facts:**
    - **Betla National Park**
        - **Location**: Chota Nagpur Plateau
        - **Forests**: tropical wet evergreen forests, mixed deciduous forests and temperate alpine forests
    - **Palamu Tger Reserve:**
        - Established in 1974 declared National Park in 1986
        - Palamau has the distinction of being the forest where the world's first tiger census was enumerated in 1932.
    - **River North Koel**

- Rises in **Ranchi Plateau**
- It is a tributary of River Son

### B. Atal Bhujal Yojana

- **News:** The World Bank has approved to provide assistance to Atal Bhujal Yojana (ABHY), a Rs.6000 crore scheme, for sustainable management of ground water.

- **Facts:**
  - **Central Sector Scheme** of the Ministry of Water Resources, River Development and Ganga Rejuvenation
  - Aims to **improve ground water management** in priority areas in the country through community participation

## 5. Livestock

### A. e – Pashudhaan Haat Portal

- **News**: Government has launched e-Pashu Haat portal for connecting breeders and farmers of indigenous breeds.

- **Facts**:
  - e -Trading Market portal for **livestock germplasm and additional related services**.
  - will connect farmers with breeders - Central, State, Co-operative and private agencies

## 6. Students

### A. Vidya Lakshmi Portal

- **News**: A web-based portal Vidya Lakshmi launched for students seeking educational loans.

- **Facts**:
  - It will provide single window for Students to access information and make application for educational Loans provided by Banks as also Government Scholarships.

### B. Ishan Vikas and Ishan Uday Scheme

- **News**: Schemes being implemented for students belonging to North East India.

- **Facts**:
  - **Ishan Vikas**: to motivate the students to pursue science, technology, engineering and mathematics and to facilitate internship opportunities for the engineering college students in various institutes of national importance.
  - **Ishan Uday**: scholarship scheme is administered by University Grants Commission (UGC) to the economically backward students from the North East Region for pursuing general degree courses, technical and professional degree courses

- **Additional Facts:**
  - **Rashtriya Uchchatar Shiksha Abhiyan (RUSA):**
    - Centrally sponsored scheme
    - Seeks to **increase the Gross Enrolment Ratio** of the country to 30% by 2020.
    - would **create new universities** through upgradation of existing autonomous colleges and conversion of colleges in a cluster
    - would create **new model degree colleges**, new professional college

- ▪ **Faculty recruitment support, faculty improvements programmes** and leadership development of educational administrators are also an important part of the scheme

## 7. Entrepreneurship and Skill Development

### A. Start-up India's Academia Alliance Program

- **News**: Start-up Academia Alliance programme has been launched under Start Up India Mission.
- **Facts**:
  - o **mentorship opportunity between academic scholars and** startups working in similar domains
  - o To reduce the gap between **scientific research and its industrial applications**
- **Additional Facts**:
  - o **Start Up India** –
    - ▪ **flagship initiative of the Government of India**, intended to build a strong ecosystem that is conducive for the growth of startup businesses, to drive sustainable economic growth and generate large scale employment opportunities.

### B. Gift A Skill

- **News**: In an effort towards women empowerment, Minister of Petroleum & Natural Gas and Skill Development and Entrepreneurship to the nation to 'Gift a Skill' to sisters on the occasion of Raksha Bandhan.

## 8. Development of Tribal

### A. Van Dhan Vikas Kendra

- **News**: The **Tribal Cooperative Marketing Development Federation of India Ltd.** (TRIFED) under the Ministry of Tribal Affairs has signed a Memorandum of Understanding (MoU) with the **National Medicinal Plants Board** (NMPB), Ministry of AYUSH.
- **Facts**:
  - o TRIFED will establish **Van Dhan Vikas Kendras** specifically for Medicinal plants & its products for skill up-gradation and capacity building
  - o NMPB will identify **potential Medicinal plant species** of the tribal areas
  - o Development of **Van Dhan SHGs cluster**
  - o Establishment of **herbal gardens**
- **Additional Facts**:
  - o **Van Dhan Scheme:**
    - ▪ Aims at economic development of tribal involved in collection of Minor Forests Produce (MFPs)
  - o **Van Dhan Vikas Kendras**:
    - ▪ Established under scheme will provide for
      - • Skill upgradation
      - • Capacity building training
      - • setting up of primary processing and value addition facility
  - o **TRIFED**: engaged in **marketing development of tribal products** and provides **marketing support** to the products made by tribal through a **network of retail outlets**.

# INTERNATIONAL ISSUES

## 1. MULTILATERAL ORGANISATIONS

### A. Indian Ocean Conference

- **News:** The third edition of Indian Ocean Conference was held in Hanoi, capital city of Vietnam from 27-28 August 2018.
- **Facts:**
  - initiated by India Foundation, an independent research centre based in New Delhi
  - aimed at ensuring peace, progress and prosperity in the region
  - 2018 Theme – **"Building Regional Architectures"**

### B. ADB Strategy 2030

- **News**: The Asian Development Bank's (ADB) Board of Directors has approved a new long-term corporate strategy, Strategy 2030
- **Facts**:
  - It is a **broad vision and strategic response** to changing needs of Asia – Pacific region.
  - institute a **"One ADB" approach**, bringing together knowledge and expertise across the organization to chieve a **prosperous, inclusive, resilient, and sustainable Asia and the Pacific**, while sustaining its efforts to eradicate extreme poverty
- **Additional Facts**:
  - **Asian Development Bank**
    - Regional development bank
    - Established in 1966 with headquarters at Mandaluyong, Philippines
    - India a member since 1966
    - Important publications and report:
      - Inclusive green growth index
      - Asian economic integration report
      - Asian Development Outlook

### C. Asian Pacific Institute for Broadcasting Development (AIDB)

- **News**: For the first time India has been elected for the position of president of **Asia-Pacific Institute for Broadcasting Development (AIBD) Kuala Lumpur**
- **Facts**:
  - The theme of the summit was `**Telling Our Stories – Asia and More'** held in New Delhi. Held in India for the first time.
- **Additional Facts**:
  - Established in **1977 under the auspices of UNESCO**
  - Services countries of the **United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP)** in the field of electronic media development.

### D. **South Asian Association of Regional Cooperation (SAARC)**

- **News**: SAARC Council of Ministers' meeting in New York.

- **Facts**:
  - o Last SAARC meet i.e. 18<sup>th</sup> SAARC summit was held in Kathmandu, Nepal in 2014.
  - o The First SAARC Agri Cooperative Business Forum was **held in Kathmandu in August 2018**
    - ▪ Co-organised by **Food and Agriculture Organization**
    - ▪ Theme - '**Organizing and Strengthening Family Farmers' Cooperatives to attain the Sustainable-Development-Goals-1 and 2 in South Asia**'
- **Additional Facts**:
  - o **SAARC**:
    - ▪ Its genesis lies in **Dhaka Charter** of 1985.
    - ▪ Eight Members - Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka
    - ▪ China – Observer status but seeking membership.
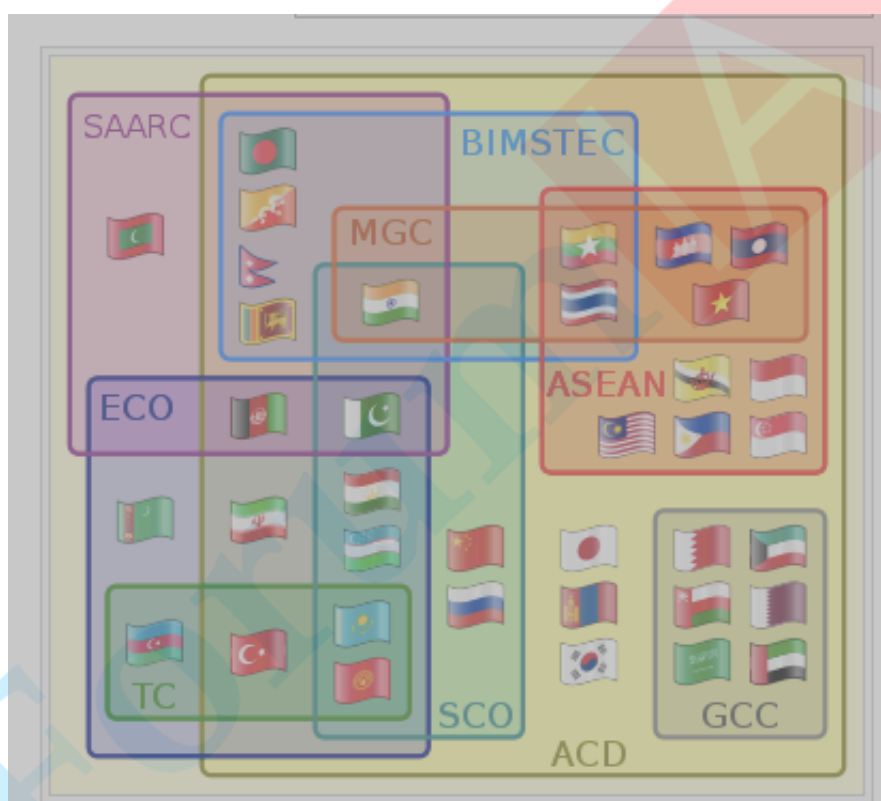


*6 Different Regional Organisations in Asia*

**E. G 20**

- **News**: **G20 Digital Economy** Ministerial Meeting, held, in Salta, Argentina, was attended by 33 heads of delegation including India.
- **Facts**:
  - o Theme - '**Building consensus for fair and sustainable development**'
  - o Aims to **maximize the benefits and confront the challenges posed by technological progress** for all stakeholders in society.
- **Additional Facts**:

- o Group of Twenty (G20) is an international forum of the world's major economies that seeks to develop global policies to address today's most pressing challenges.
  - o The G20 is made up of 19 countries and the European Union.
  - o The G20 was born out of a meeting of G7 finance ministers and central bank governors in 1999.

**F. RCEP**

- **News:** Delegates of 16 Regional Comprehensive Economic Partnership (RCEP) member states attended the 6th RCEP Ministerial Meeting held in Singapore

- **Facts:**
  - o seeks to create an open, rules-based and inclusive global trade environment
  - o It is an **economic partnership agreement**

- **Additional Facts**:
  - o RCEP is a proposed wide area economic partnership, which is under negotiation among ten ASEAN member states and 6 non-member states (**Japan, China, The Republic of Korea (ROK), Australia, New Zealand, and India).**
  - o RCEP aims to cover **goods, services, investments, economic and technical cooperation, competition and intellectual property rights**

## 2. BILATERAL RELATIONS

## A. India and Central Asia

- **News:** External affairs minister Sushma Swaraj will undertake a three-nation Central Asian tour from August 2-5.

- **Facts:**
  - o Countries being visited**:** Kazakhstan, Kyrgyzstan and Uzbekistan
  - o India to boost ties with Central Asian countries has **launched 'Connect Central Asia Policy'**
  - o Different International fora where India engage Central Asian Countries.
    - ▪ International North-South Transport Corridor (INSTC) and Ashgabat Agreement.
    - ▪ Shanghai Cooperation Organization (SCO)
    - ▪ Eurasian Economic Union (EEU)



*7 India and Central Asia Engagement*

*8 India's Military Base in Tajikistan*

**B. Indian – Sri Lanka**

- **News**: India to acquire a controlling stake in Sri Lanka's **Mattala Rajapaksa International Airport**

- **Facts**:

  o Mattala Rajapaska Internationa Airport earlier known as **Hambantota International Airport** is one of the dream project of former President Mahinda Rajapaska at Hambantota Project.

  o **Hambantota project comprised of**

    ▪ **Hambantota maritime port** which has now been leased to China for 99 years.

    ▪ Mattala Rajapaska International Airport

  o It is the **world's emptiest airport**.

**3. 88-88 Uprising**

- **News**: August 8 marks the 30th anniversary of the people's uprising in Myanmar

- **Facts**:

  o It was a **people's movement** which was **pro-democracy** in the year 1988.

  o **Objective of 8888 uprising**

    ▪ to push for the transfer of power from the military to a civilian leadership

    ▪ change in the political system from an authoritarian regime to a multi-party democracy.

  o It challenged then ruling Burma Socialist Programme Party's which has pushed Myanmar to extreme poverty

  o Provided for Aung San Suu Kyi's entry into politics

  o **Flag with the 'Fighting Peacock' insignia** was the symbol of uprising.

**4. Korea**

- **News**: North and South Korea agreed to hold a summit in the North Korea in September.

- **Facts**:

  o Recent meeting between two nations was held truce village of Panmunjom, in the demilitarised zone (DMZ)

- **Additional Facts**:

  o North and South Korea are divided by 38th parallel.

  o The Demilitarized Zone (DMZ) is a region on the Korean peninsula that demarcates North Korea from South Korea,

  o The 150-mile-long DMZ incorporates territory on both sides of the cease-fire line as it existed at the end of the Korean War (1950–53).

**5. Syrian Civil War**

- **News**: Talks between representatives of Syria's Kurdish rebels and President Bashar al-Assad's regime in Damascus

- **Facts**:
  - Started in 2011, it saw its recent phase from May to August 2018.
  - **Issues in Syria leading to civil war:**
    - Poor life under dictatorial rule of Bashar Al Assad leading to pro – democracy movement inspired by Arab Spring
    - Use of deadly force by state to crush the dissent
    - Hatred between Syria's religious groups, pitching the Sunni Muslim majority against the President's Shia Alawite sect
    - Flourish in terrorist groups like Al Qaeda and Islamic State (IS)
    - Syria's Kurds, who want the right of self-government
  - Government is backed by Russia and Iran while US, Saudi Arabia and Turkey support the rebels.
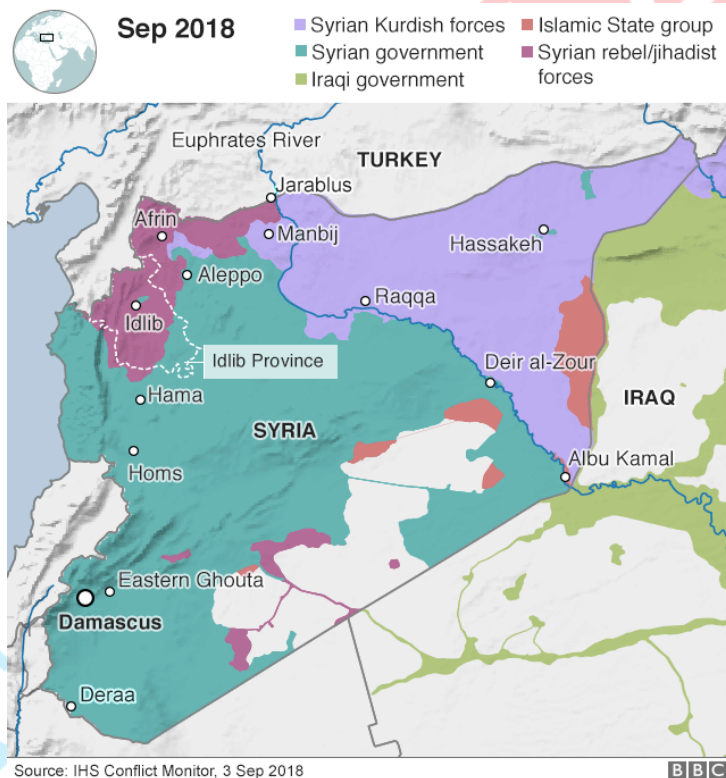


*9 Different Stakeholders in Syrian Civil War*

**1. Currency War**

- **News**: Reserve Bank of India (RBI) Governor Urjit Patel has flagged the risks to macroeconomic stability from a potential 'currency war' in the wake of rising global trade tensions

- **Facts**:
  - When nations allow their **currency to weaken appreciably or devalue them to gain competitive edge over rival nations**, it is known as Currency war.
  - If other countries react by devaluing their respective currencies to retain competitiveness, this could lead to instability in markets.
  - **Devaluation**: policy tool to reduce the value of a currency, relative to other currencies, in a fixed exchange rate. This is different from depreciation where currency decreases due to market forces.
  - **Reasons for devaluation**:
    - To boost exports
    - To shrink a trade deficit
    - To reduce the debt servicing burden

- **Additional Facts**:
  - India has devalued its currency twice:
    - once in 1966 owing to drought after wars with Pakistan and China,
    - in 1991, due to BoP crisis caused due to spike in oil prices owing to Gulf Wars.

**2. KITE Economy (Gig Economy)**

- **News**: Boom in KITE economy and Gig economy.

- **Facts**:
  - **KITE economy** - knowledge and information technology-based, intellectual property-focussed and entrepreneurially-led economy
  - **GIG economy** - In a gig economy, temporary, flexible jobs are commonplace and companies tend toward hiring independent contractors and freelancers instead of full-time employees.

**3. White Label ATM**

- **News**: Cash supply stress, cost pressures hurting growth of white label ATMs (Automated Teller Machine)

- **Facts**:
  - White label ATMs, are the ATMs permitted by RBI which are operated by **non – bank entities**.
  - They don't have any bank logo.
  - **Cash deposits are not accepted** at White Label ATMs.
  - White Label ATMs were conceptualised to **foster financial inclusion**.

- **Additional Facts**:
  - **Other Types of ATM**:
    - Bank owned ATMs
    - Brown Labelled ATMs

**Note**: Read about the different types of ATMs

### 4. LOUs and LOCs

- **News**: RBI must resume issuing LoUs, LoCs, says parliamentary panel
- **Facts**:
  - **LOUs - Letter of Undertaking** is a bank guarantee under which a bank allows its customer to raise money from another Indian bank's foreign branch in the form of short-term credit. The loan is used to make payment to the customer's offshore suppliers in foreign currency.
  - **LOCs - A Line of Credit** is a standing amount of money, similar to a loan, that a bank extends to a customer. A customer may draw upon the available line of credit, provided that the amount does not exceed the limit.

### 5. UPI 2.0

- **News**: National Payments Corporation of India (NPCI) has launched UPI 2.0 as an upgrade to Unified Payment Interface (UPI)
- **Facts**:
  - UPI is a payment system that **allows money transfer** between any two bank accounts by using a smartphone.
  - UPI allows a customer to **pay directly from a bank account to different merchants**, both online and offline
  - 24/7 immediate money transfer through mobile device
  - Single mobile application for **accessing different bank accounts**.
  - Single 2 Factor Authentication.
  - **UPI 2.0**
    - Link **Overdraft accounts** to UPI.
    - Allow customers to **check their invoice** sent by merchants prior to making payments.
    - Customers would be able to **check the authenticity of merchants** while scanning QR code.
    - Customers will now be able to **pre-authorise a transaction and pay at a later date**.
  - National Payments Corporation of India (NPCI) is an **umbrella organization for operating retail payments and settlement systems** in India

### 6. Concession Financing Scheme

- **News**: The first extension of Concessional Financing Scheme(CFS) have been approved by Union Cabinet
- **Facts**:
  - CFS is aimed to support Indian Entities **bidding for strategically important infrastructure projects abroad** since 2015-16.
  - Under the Scheme, MEA **selects the specific projects** keeping in view strategic interest of India
  - The Scheme is presently being operated through the **Export-Import Bank of India**.

### 7. Unconventional Hydrocarbons Exploration

- **News**: The Union Cabinet has approved the policy to permit exploration and exploitation of unconventional hydrocarbons such as Shale oil/gas, Coal Bed Methane (CBM) etc.
- **Facts**:
  - It will be carried out under the existing **Production Sharing Contracts (PSCs)**

o **Production Sharing Contracts (PSCs)**- It is an agreement between Contractor and Government whereby **Contractor bears all exploration risks**, **production and development costs** in return for its stipulated share of (profit from) production resulting from this effort.

o Production Sharing Contracts became widely adopted as part of the **New Exploration and Licensing Policy (NELP)**

## 8. Blockchain Bond

- **News**: The World Bank launched world's first blockchain bond named **Bond – I**
- **Facts**:
  - o Bond - I will be **created, allocated, transferred and managed by using blockchain technology**.
  - o Bond - I stands for **Blockchain Offered New Debt** Instrument as well as a reference to Australia's famous Bondi beach in Sydney.
  - o Bond-I is **Ethereum blockchain bond** dominated in Australian dollars.
  - o Funds raised from this bond will go **towards sustainable development initiatives**.
  - o World Bank has chosen **Commonwealth Bank of Australia** as a sole arranger for this bond.
  - o Maturity period of bond is two-year
- Additional Facts:
  - o **Blockchain**: it is a growing set/list of records called as blocks which are secured by cryptographic encryption.
  - o Ethereum is an **open-source, public, blockchain-based distributed computing platform** and operating system featuring smart contract functionality**.**
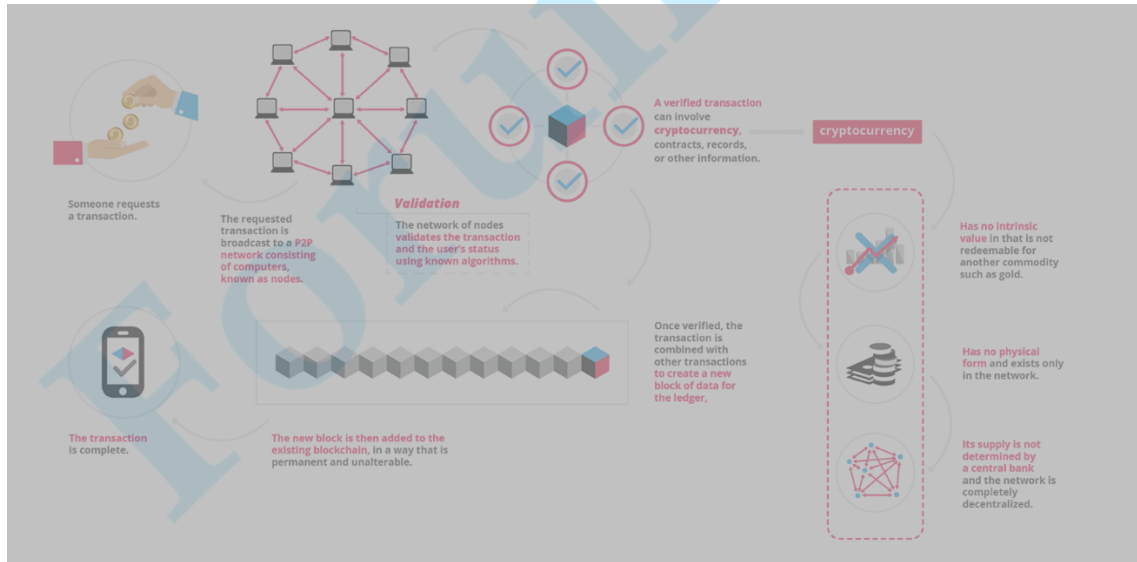


*10 How Blockchain works*

## 9. Aadhar

- **News**: **Axis Bank** has become the first bank in the county to introduce Iris Scan Authentication feature for Aadhar-based transactions through its micro ATM tablets
- **Facts**:
  - o Micro ATMs completely eliminate the **requirement of debit cards, passwords, PINs and user IDs**.
  - o This service **requires a customer to scan their iris on a tablet**.

- o This will **boost the bank's financial inclusion** efforts by offering easier access to digital banking for consumers especially in the rural parts of the country.
- o **Iris scan technology** is completely contactless and provides up to 98.2% authentication success rate.

## 10. Proposal for City Level GDP

- **News**: The Centre hopes to bring out **city-level GDP data** as the urban India is responsible for an increasingly large share of the national GDP.

- **Facts**:
  - o The urban sector is likely to account for **75% of India's GDP by 2020**
  - o It will help both cities and investors to make wise decisions and would also help **municipal bodies to raise funds for their own infrastructure needs**

## 11. Indexes in News

### A. Global Innovation Index

- **News**: Global Innovation Index, GII- 2018 launched in India.

- **Facts:**
  - o Published annually by **World Intellectual Property Organisation (WIPO) in collaboration with INSEAD**.
  - o **India Ranking** – 57 (2018) from 60 (2017)

- **Additional Facts**:
  - o WIPO is an **United Nation Agency**, established in 1967 with headquarters in Geneva.
  - o In India, **Department of Industrial Policy and Promotion** has been empowered to make rules and regulations and look into the matter of Intellectual property.
  - o **Intellectual Property**:
    - ▪ Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.
    - ▪ It is protected in law by, for example, patents, copyright and trademarks.

### B. Atal Ranking of Institutions on Innovation Achievements (ARIIA)

- **News**: Ministry of Human Resource Development (HRD) has introduced **Atal Ranking of Institutions on Innovation Achievements (ARIIA)**

- **Facts**:
  - o To **systematically rank education institutions** and **universities** primarily on innovation related indicators.
  - o The ranking will encourage high-quality research, innovation and entrepreneurship, making our educational institutions globally competitive and at forefront of innovation

### C. Global Liveability Index

- **News**: Global Liveability Index 2018 was released in August.

- **Facts**:
  - o Published annually by **Economist Intelligence Unit (EIU)**
  - o **Delhi was ranked 112** and **Mumbai five places behind at 117** are the only Indian cities on the list**.**
  - o The index assigns cities scores on **five broad parameters** — stability, healthcare, culture/environment, education, and infrastructure using 30 indicators.

- o Austria's capital Vienna has been ranked first and Syrian capital Damascus has been ranked at the bottom.

### D. State Energy Efficiency Preparedness Index

- **News**: Bureau of Energy Efficiency (BEE) and Alliance for an Energy Efficient Economy (AEEE), released the 'State Energy Efficiency Preparedness Index'.

- **Facts**:
  - o The nationwide Index is a joint effort of the **NITI Aayog and BEE**
  - o based upon their efforts and achievements towards energy efficiency implementation states have been categorised as - front runner, achiever, contender and aspirant
  - o Five states were **enumerated in the front runner list** – Andhra Pradesh, Rajasthan, Punjab, Maharashtra and Kerala
  - o It seeks to create awareness about emergency efficiency and inculcate energy conservation.

- **Additional Facts**:
  - o The Government of India set up Bureau of Energy Efficiency (BEE) in 2002 under the provisions of the **Energy Conservation Act, 2001.**

# SECURITY AND DEFENCE

### 1. Defence Offset Fund

- **News**: To fund **promising defence start-ups**, the defence ministry intends to canalise money that accrues from the discharge of offsets into a Defence Offsets Fund (DOF), and leverage that with market funding.

- **Facts**:
  - Defence offset mandates foreign suppliers to spend at least 30% of the contract value in India.
  - The Ministry of Defense introduced the offset policy following recommendations **from a panel headed by former finance secretary Vijay Kelkar**
  - The policy now **allows the private sector to compete** in the production of surveillance vessels, such as inshore and offshore patrol vessels, with defense shipyards

### 2. BARAK 8 Missile

- **News**: In a boost to India's maritime prowess, the Navy has successfully test-fired the nearly **Barak 8** from INS Kolkata.

- **Facts**:
  - 70 KM range Surface to Air Missile, **developed jointly by India and Israel,**
  - **Long Range Surface to Air Missile (LR SAM)** is a significant milestone in enhancing Indian navy's anti-air warfare capability.
  - The system includes a **Multi-Functional Surveillance and Threat Alert Radar (MF STAR)** for detection, tracking and guidance of the missile.
  - Designed to defend against a variety of **short-to-long -range airborne threats**
  - Barak - 8 incorporates phased **array multi-mission radar**, **two-way data link**, and a **flexible command and control system**, enabling users to simultaneously engage multiple targets day and night.

### 3. Supersonic endo – atmospheric interceptor missile

- **News:** India successfully test-fired its indigenously developed supersonic interceptor missile
- **Facts:**
  - Full-fledged **multi-layer Ballistic Missile defense (BMD) system**, capable of destroying any incoming hostile ballistic missile
  - **single stage solid rocket** propelled guided missile equipped with a navigation system, a hi-tech computer and an **electro-mechanical activator**
  - The BMD consists of **two interceptor missiles**, the Prithvi Defence Vehicle (PDV) for exo – atmospheric ranges and Advanced Area Defence (AAD) missile for endo – atmosphere for lower latitudes.

### 4. Operation Madad and Operation Sahyog

- **News**: Operation Madad and Sahyog were launched by the Southern Naval Command at Kochi.
- **Facts**:
  - For assisting the state administration and undertaking disaster relief and rescue operations during Kerala floods.

## 5. Defence Industrial Corridor

- **News**: Uttar Pradesh Defence Industrial Corridor took off to a great start with an announcement of **investment over Rs. 3700 crore in defence production** at Industry Meet organized at Aligarh.

- **Facts:**
    - Defence manufacturing has been identified as one of the 25 key sectors under Make in India initiative.
    - Announcement of setting up two corridors – Tamil Nadu and Uttar Pradesh exclusively for defence manufacturing in the current years' budget.

## 6. Smart Anti Airfield Weapon (SAAW)

- **News**: The latest round of SAAW were carried out at the Chandan Firing Range near Pokhran in Rajasthan.

- **Facts**:
    - It is a **precision-guided glide bomb** specialised at making runways and airfields unsuitable for take-off and landing operations.
    - designed for **deep penetration and is armed with a high-explosive warhead**
    - is India's attempt at building an **indigenous weapon for the specialised operation**

## 7. Anti – Tank Guided Missile (ATGM) 'HELINA'

- **News**: An Indian Army helicopter successfully test fired the **third-generation anti-tank guided missile** (ATGM) HELINA at the Pokhran test range in the Thar Desert region.

- **Facts**:
    - A **fire and forget** air-launched variant of the Nag missile
    - guided by an Infrared Imaging Seeker (IIR)
    - Helicopter – Launched Nag (HELINA)

- **Additional Facts**:
    - Nag is developed under the Indian Ministry of Defence's integrated guided missile development programme (IGMDP)
    - Agni, Akash, Trishul and Prithvi are also being developed under integrated guided missile development programme (IGMDP)

## 8. Military Exercises

### A. KAKADU 2018

- **News**: Indian Naval ship Sahyadri reached Darwin, Australia for exercise KAKADU 2018.

- **Facts**:
    - Biennial exercise hosted by the **Royal Australian Navy (RAN)** and supported by the **Royal Australian Air Force (RAAF)**
    - Australia's largest maritime exercise

### B. Pitch Black – 18

- **News**: Ex Pitch Black was hosted by Royal Australian Air Force (RAAF) from 24 Jul 18 to 18 Aug 18 in Darwin, Australia.

- **Facts**:
    - Biennial exercise hosted by the **Royal Australian Air Force (RAAF)**

- o the first time that IAF participated with air assets in the Exercise Pitch Black (PB-18). India had participated with observer status prior to this.
  - o The exercise hosts up to **4000 personnel and up to 140 aircraft** from around the globe and utilises the **largest training airspace areas in the world** – Bradshaw Field Training Area and Delamere Air Weapons Range

### C. Maitree Exercise

- **News**: Exercise Maitree 2018, a two week **long platoon level joint military exercise** was conducted between **Indian Army and Royal Thai Army**.
- **Facts**:
  - o Annual event designed to strengthen the partnership between Royal Thai Army, Indian Army in the Thailand.

### D. Peace Mission 2018

- **News**: The joint exercise is being conducted by the Central Military Commission of Russia at Chebarkul, Russia.
- **Facts**:
  - o Mega anti-terror drill of the Shanghai Cooperation Organisation (SCO)
  - o First military exercise involving the **militaries of India and Pakistan**

# ENVIRONMENT AND ECOLOGY

### 1. Khangchendzonga Biosphere Reserve

- **News**: The Khangchendzonga Biosphere Reserve has become the 11th Biosphere Reserve from India that has been included in the UNESCO designated World Network of Biosphere Reserves (WNBR).
- **Facts**:
    - Khangchendzonga Biosphere Reserve in **Sikkim** is one of th**e highest ecosystems in the world**
    - It includes a **range of ecoclines**, varying from subtropics to Arctic, as well as natural forests in different biomes
    - The core zone – Khangchendzonga National Park was **designated a World Heritage Site in 2016** under the 'mixed' category
- **Additional Facts**:
    - World Network of Biosphere Reserves (WNBR): a program under Man and Biosphere program consists of a dynamic and interactive network of sites of excellence
        - Composed of 686 biosphere reserves in 122 countries, including 20 transboundary sites.
    - UNESCO's Man and the Biosphere Programme (MAB) is an Intergovernmental Scientific Programme that aims to establish a scientific basis for the improvement of relationships between people and their environments.
    - 11 of India's 18 biosphere reserves are a part of WBNR

| Name | States | Year |
|---|---|---|
| Nilgiri Biosphere Reserve | Tamil Nadu, Kerala, Karnataka | 2000 |
| Gulf of Mannar Biosphere Reserve | Tamil Nadu | 2001 |
| Sundarbans Biosphere Reserve | West Bengal | 2001 |
| Nanda Devi Biosphere Reserve | Uttarakhand | 2004 |
| Nokrek Biosphere Reserve | Meghalaya | 2009 |
| Pachmarhi Biosphere Reserve | Madhya Pradesh | 2009 |
| Simlipal Biosphere Reserve | Odisha | 2009 |
| Great Nicobar Biosphere Reserve | Great Nicobar | 2013 |
| Achanakmar-Amarkantak Biosphere Reserve | Chhattisgarh, Madhya Pradesh | 2012[2] |
| Agasthyamalai Biosphere Reserve | Kerala and Tamil Nadu | 2016[5] |
| Khangchendzonga National Park | Sikkim | 2018[6] |

*11 India's Biosphere recognised under WBNR*

***Note to Students***: *Please study about 18 Biosphere Reserves of India. Make a list of rivers flowing thorugh them or nearby to them. Also, prevalent fauna in each biosphere reserve.*

### 2. Green Corridor in Railways

- **News:** Indian Railways is proliferating bio-toilets on its coaching stock so that no human waste is discharged from coaches on to the track.
- **Facts:**
    - **introduction of bio-toilets in coaches**
    - All the **human excreta** is collected in an **eco-friendly bio-tank** fitted under each toilet
    - The 114 km long **Rameswaram-Manamadurai** stretch in Tamil Nadu is the country's first green rail corridor

o The North Western Railway has declared the **Barmer - Munawab** and **Pipad Road - Bilara** rail routes in Rajasthan as Green Corridors.

- **Additional Facts**:
  - o **Other Usage of term Green Corridor**:
    - Green corridor refers to a special **road route that enables harvested organs** meant for transplants to reach the destined hospital.
    - Green corridor also is invariably **used for Highways** being built along with tree and plant cover along its sides.

## 3. National Energy Storage Mission

- **News**: An Expert Committee was constituted by the Ministry of New & Renewable Energy to propose draft for setting up National Energy Storage Mission (NESM) for India.
- Facts:
  - o Objective is to **strive for leadership in energy storage sector**
  - o **NITI Aayog** and **Rocky Mountain Institute's joint report** on India's Energy Storage Mission has proposed **three stage solution approach**
- **Additional Facts**:
  - o **Key areas for energy storage application include**:
    - Integrating renewable energy with distribution and transmission grids;
    - Setting Rural micro grids with diversified loads or stand-alone systems; and
    - Developing Storage component of electric mobility plans.

## 4. Ganga cleaning projects

- **News**: Geographic information system (GIS) technology to aid in Ganga clean up.
- **Facts**:
  - o National Mission for Clean Ganga (NMCG) is using Geographic Information System (GIS) technology



*12 GIS in Ganga Cleaning*

- **Additional Facts**:
  - o **Namami Gange Programme** was launched in May 2015 for the conservation of river Ganga with a total outlay of Rs.20,000 Crores.
  - o It is an umbrella programme which integrates previous and currently ongoing initiatives.

### 5. Zero Budget Natural Farming

- **News**: NITI Aayog has advised States to adopt zero-budget natural farming.
- **Facts**:
  - ZBNF is a set of natural farming methods where the **cost of growing and harvesting plants is zero**.
  - It is a farming practice that believes in the natural growth of crops without adding any fertilizers and pesticides or any other foreign elements.



**FOUR PILLARS OF ZERO BUDGET NATURAL FARMING**

| FIRST WHEEL 1 | Bijamrita (Seed treatment) |
| SECOND WHEEL 2 | Jiwamrita (No fertilizers No Pesticides) |
| THIRD WHEEL 3 | Mulching (Soil, straw & live) |
| THIRD WHEEL 4 | Waaphasa (Soil moisture) |

*13 Pillars of ZBNF*

  - Zero Budget Natural Farming (ZBNF) is also a grassroots peasant movement.
  - It has attained **wide success in southern India**, especially the southern Indian state of Karnataka where it first evolved.
  - The word 'budget' refers to **credit and expenses**, thus the phrase 'Zero Budget' means without using any credit, and without spending any money on purchased inputs.
  - 'Zero budget' farming **promises to end a reliance on loans** and drastically cut production costs, ending the debt cycle for desperate farmers.

### 6. Cage Farming

- **News:** The Centrally Sponsored Scheme (CSS) on Blue Revolution: Integrated Development and Management of Fisheries approved by the Government in December 2015 inter-alia provides financial assistance for (i) open sea cage culture and (ii) installation of cages/pens in reservoirs and other open water bodies.
- **Facts:**
  - **Cage Farming** – is a method of fish farming.
  - Sea cage culture involves **growing fishes in the sea while being enclosed in a net cage** which allows free flow of water. It is a production system comprising of a floating frame of varying dimensions and shape, net materials and mooring system, to hold and culture a large number of fishes.

### 7. India's National REDD+ Strategy

- **News:** Environment Ministry Released India's National REDD+ Strategy.
- **Facts:**
  - The strategy seeks to address **drivers of deforestation and forest degradation**.
  - Developing a roadmap for **enhancement of forest carbon stocks** and **achieving sustainable management of forests** through REDD+ actions.

- strategy builds upon existing national circumstances which have been updated in line with India's **National Action Plan on Climate Change**, **Green India Mission** and **India's Nationally Determined Contribution (NDC) to UNFCCC**.
  - REDD+ actions are **not used for the conversion of natural forests**, but are instead used **to incentivize the protection and conservation of natural forests and their ecosystem services**, and to enhance other social and environmental benefits.
- **Additional Facts**:
  - REDD was **first and foremost focused on reducing emissions from deforestation and forest degradation**.
  - In 2007 the Bali Action Plan, stated that a comprehensive approach to mitigating climate change should include **policy approaches and positive incentives** on issues relating to reducing emissions from deforestation in developing countries, role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.
  - Finally, in 2010, at COP-16 as set out in the the Cancun Agreements, **REDD became REDD-plus (REDD+)**, to reflect the new components. REDD+ now includes:
    - Reducing emissions from deforestation;
    - Reducing emissions from forest degradation;
    - Conservation of forest carbon stocks;
    - Sustainable management of forests;
    - Enhancement of forest carbon stocks.
  - Within its remit, REDD+ has the potential to simultaneously contribute to climate change mitigation and poverty alleviation, whilst also conserving biodiversity and sustaining vital ecosystem services

## 8. Biofuel

- **News**: **India's first biofuel powered flight** was operated by Spicejet Bombardier Q-400 aircraft.
- Facts:
  - A blend of **oil from Jatropha seeds and aviation turbine fuel** propelled the country's first bio-jet fuel flight.
  - **Virgin Atlantic** carried out the first test flight globally in 2008.
  - India has joined an elite club of nations including **USA and Australia** who use biofuel for commercial flights.
- **Additional Facts**:
  - **Biofuels**: are fuel produced from renewable biomass material, commonly used as an alternative, cleaner fuel source to burning fossil fuels.
  - **Generation of Biofuels**:
    - **First Generation**:
      - produced directly from food crops
      - wheat and sugar are the most widely used feedstock for bioethanol while oil seed rape has proved a very effective crop for use in biodiesel.
      - No actual benefit in reducing greenhouse gases has been evident for first generation biofuels

- **Second Generation:**
  - produced from non-food crops such as wood, organic waste, food crop waste and specific biomass crops
  - **Cellulosic ethanol technolog**y and **non-food crop technologies** such as jatropha-based biofuels.
- **Third Generation**:
  - based on improvements in the production of biomass.
  - The algae are cultured to act as a low-cost, high-energy and entirely renewable feedstock.
  - algae based biofuels can be manufactured into a wide range of fuels such as diesel, petrol and jet fuel.
- **Fourth Generation**:
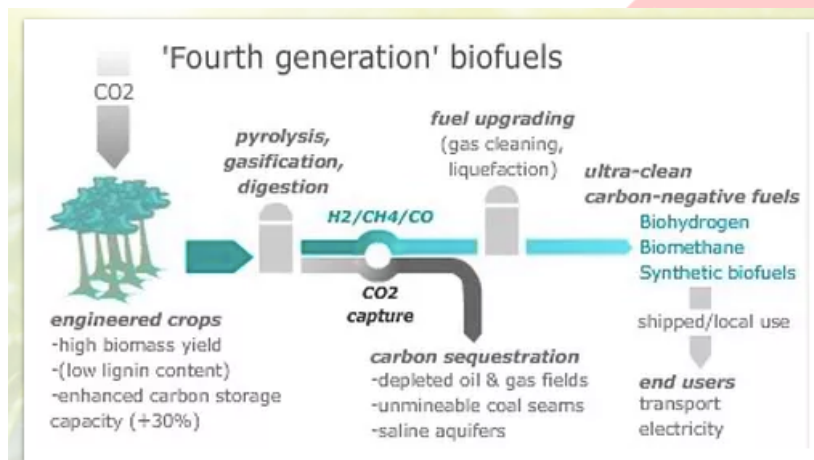


*14 Fourth Generation Biofuels*

## 9. Cheetah reintroduction project

- **News**: The wildlife institute of India, has shortlisted three sites as possible habitats for reintroduction of cheetahs.
- **Facts**:
  - The Asiatic cheetah became **extinct** in India in 1952
  - **Cheetah Conservation of Fud (CCF) model of Namibia** is considered to be one of the best approach for their conservation
  - Shahgarh area in Rajasthan, Kuno Palpur and Neoradehi Sanctuaries in Madhya Pradeshare the three sites in India.

## 10. Genetic Resource Bank

- **News:** Science and Technology Ministry dedicated to the nation, the first National Wildlife Genetic Resource Bank in Hyderabad
- **Facts:**
  - is the systematic collection and preservation of tissues, sperm, eggs and embryos, genetic material (DNA/RNA) of Indian species.

- o It will help maintain genetic diversity and conservation management made accessible to scientists and wildlife managers
- **Additional Facts**:
  - o CCMB-LaCONES (**Laboratory for the Conservation of Endangered Species)** is the only laboratory in India that has developed methods for **collection and cryopreservation of semen and oocytes from wildlife and successfully reproducing** endangered black buck, spotted deer and Nicobar pigeons
  - o **Cryopreservation**: The process of cooling and storing cells, tissues, or organs at very low temperatures to maintain their viability

## 11. Petcoke

- **News**: India recently banned the import of pet coke for use as fuel, but said shipments for use as feedstock in some industries was allowed.
- **Facts**:
  - o Petcoke is an **exceptionally polluting form of carbon** which is banned in several countries due to its severe toxicity.
  - o Petroleum coke or petcoke, is a **final carbon-rich solid material** that derives from oil refining.
  - o It is categorized as a "bottom of the barrel" fuel as it is essentially **residual waste material** which is obtained after refining coal to extract lighter fuels like petrol.
  - o Petcoke is **abundantly used in India** in several manufacturing industries such as cement, steel and textile and it is generated in vast quantities by refineries as it is significantly cheaper that coal, has high calorific value and is **easier to transport and store**.
  - o Petcoke is over **90 percent carbon** and emits **5 to 10 percent more carbon dioxide** ($CO_2$) than coal on a per-unit-of-energy basis when it is burned.
  - o Import of Petcoke is allowed for only cement, lime kiln, calcium carbide and gasification industries

## 12. PARIVESH

- **News:** The Prime Minister, recently launched PARIVESH (Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-window Hub) on the occasion of World Biofuel Day
- **Facts:**
  - o PARIVESH is an Environmental Management System, developed in pursuance of the spirit of 'Digital India'



*15 Parivesh Components*

o It is a single window hub for Environment, Forest, Wildlife and Coastal Regulation Zone (CRZ) clearances.

o "PARIVESH" is a workflow based application, based on the concept of web architecture.

## 13. Singphan Elephant Reserve

- **News:** The Nagaland government recently declared the Singphan Wildlife Sanctuary as **an elephant reserve** with the approval of Government of India making it the 30th reserve for jumbos in the country.

- **Facts:**

o located in contiguity with the Abhaypur Reserve Forest of Assam

## 14. 3D Printed Artificial Reef

- **News:** The world's largest 3-D printed reef has been submerged at Summer Island Maldives by Australian group Reef Design Labs (RDL).

- **Facts:**

o It is regarded as a new technology-driven method to help coral reefs survive climate change and warming waters

o It resembles atoll reef of Maldives.

- **Additional Facts**:

o **Coral Reefs**:

▪ An underwater ecosystem formed of colonies of coral polyps held together by Calcium Carbonate

▪ One of the most productive ecosystem is also called **tropical rainforest of oceans**.

o **Coral Reefs in India**
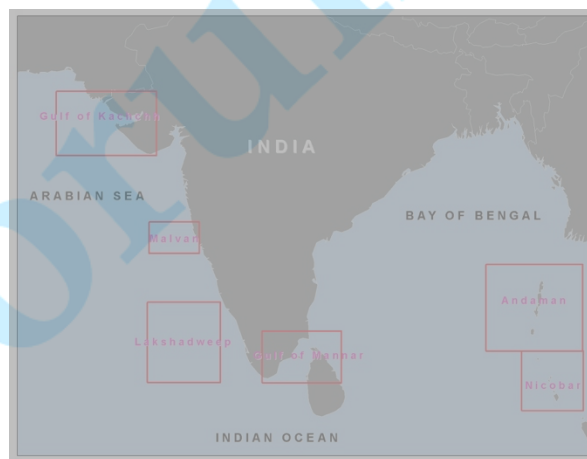
*16 Coral Reefs in India*

▪ While the **Lakshadweep reefs are atolls**, the others are all **fringing reefs**. **Patchy coral** is present in the inter-tidal areas of the **central west coast** of the country.

o The Maldives is the **largest atoll** in the world

## 15. Pesticides

- **News:** Government of India recently banned 18 toxic pesticides citing the harmful effects they could cause humans and animals on the recommendation of Anupama Verma Committee.

- **Facts:**

- o Of the 18 pesticides, the registration, manufacture, import, sale and use of 11 were banned with immediate effect while six will be phased out by December 2020.
- o One, the **herbicide trifluralin,** has also been immediately banned except for use in wheat.
- o The Verma committee had recommended a **complete ban on trifluralin and DDT**.
- o The ban neither includes **monocrotophos and mancozeb**, both of which were implicated in the deaths of dozens of cotton farmers in Central India last year nor DDT, commonly sprayed by civic administrations as a mosquito repellent and used in farming.
- o The Verma panel did not review the **use of endosulfan**, as it is being examined by the Supreme Court.

## 16. Dal Lake

- **News:** Assessments show that the size of the water body has come down by half
- **Facts:**
  - o Extensive **growth of Hyacinth** (leading to Eutrophication of lake) on dal Lake due to encroachments of water channels and clogging, as it hampers circulation and inflows into the lake.
  - o Soil discharges from houseboats causing pollution.
- **Additional Facts**:
  - o **Dal Lake:**
    - ▪ Located in Srinagar
    - ▪ lake is fed by Dachigam-Telbal Nallah (with perennial flow)
    - ▪ It has the floating gardens, known as "Rad" in Kashmiri, which blossoms with lotus flowers during July and August.
    - ▪ Considered a wetland which is divided by causeways into four basins; Gagribal, Lokut Dal, Bod Dal and Nagin Lake.
  - o **Eutrophication**
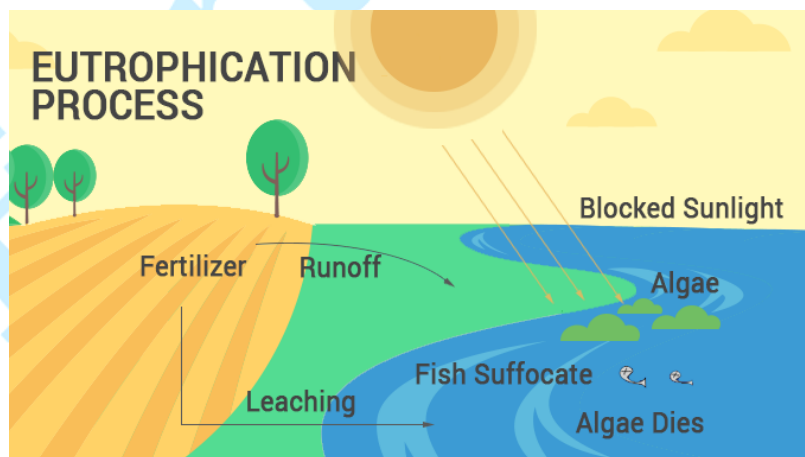


*17 Eutrophication Process*

## 17. Invasive Species

- **News:** The Indian bull frog, a recent arrival from the mainland, is steadily occupying the Andaman islands' ecosystem and threatening the local economy.
- **Facts:**
  - o Indian bullfrog (Hoplobatrachus tigerinus)

- o **Invasive species**: can be any kind of living organism—an amphibian (like the cane toad), plant, insect, fish, fungus, bacteria, or even an organism's seeds or eggs—that is not native to an ecosystem and causes harm. They can harm the environment, the economy, or even human health.



| INVASIVE SPECIES FOUND IN INTERTIDAL HABITATS OF KERALA COAST: **10** | **NO GOOD TIDINGS** |
| --- | --- |
| | ◐ Sea slug or Winged Thecacera was found in southwest coast of India |
| ◐ Seaweed: 1 | ◐ Ballast water is one of the biggest transporters of non-native marine species |
| ◐ Bryozoan: 1 | |
| ◐ Mollusc: 1 | ◐ Over **10,000** marine species being transported across the world in ballast water |
| ◐ Ascidian: 7 | |

**BALLAST FOR STABILITY**

Ballast is a compartment in a ship that provides it stability. It holds water, which moves in and out of it to balance the ship. Ballast remains below the water level, to counteract the weight above the water level.

*18 Invasive Species*

- o **Some commonly found invasive species in India are**
    - ▪ **African apple snail (Achatina fulica):** The most invasive among all alien fauna in India, this mollusc was first reported in the Andaman and Nicobar Islands. It is now found across country and is threatening the habitat of several native species.
    - ▪ **Papaya Mealy Bug (Paracoccus marginatus):** Native of Mexico and Central America, it is believed to have destroyed huge crops of papaya in Assam, West Bengal and Tamil Nadu.
    - ▪ **Cotton Mealy Bug (Phenacoccus solenopsis):** Native to North America, it has severely affected cotton crops in Deccan
    - ▪ **Amazon sailfin catfish (Pterygoplichthys pardalis):** This species is responsible for destroying the fish population in the wetlands of Kolkata.

## 18. Peacock

- **News**: A firing range boasts of an impressive peafowl population
- **Facts**:
    - o National bird
    - o sizeable population of peafowl in Naraj - Siddheswar Firing Range on the outskirts of Bhubaneswar, Odisha
    - o near Chandaka - Dampada Wildlife Sanctuary
    - o Panu Behera – Peacock man of India
- **Additional Facts**
    - o **Chandaka - Dampada Wildlife Sanctuary**
        - ▪ Location - up land of North-Eastern Ghat
        - ▪ Principal Animal – Elephant

## 1. The Personal Data Protection Bill, 2018

- **News**: The justice BN Srikrishna committee submitted a draft Personal Data Protection bill, 2018 to the government.
- **Facts**:



**DATA PROTECTION: WHAT'S ON THE ANVIL?**

The Justice B.N. Srikrishna committee on Friday submitted to the government a draft of the Personal Data Protection Bill, 2018. Following are the key highlights of the proposed law:

► The law will have jurisdiction over personal data that is used, shared, disclosed, collected, or otherwise, processed in India.

► The law will not have retrospective application and will come into force in a structured and phased manner.

► It will cover personal data used by companies incorporated under Indian law, irrespective of the data being processed in India, or not.

► The law will cover processing of personal data by both public and private entities.

► Sensitive personal data will include passwords, financial data, health data, sex life, sexual orientation, biometric and genetic data.

► Such data also covers information that reveals transgender status, intersex status, caste, tribe, religious or political beliefs or affiliations of an individual.

► A regulator—Data Protection Authority of India (DPA)—will be set up for the effective implementation and enforcement of the law.

► The new regulator will have a chairperson and six whole-time members.

► For consent from individuals to be valid, it should be free, informed, specific, clear and capable of being withdrawn.

► For sensitive personal data, consent will have to be explicit.

► Individuals will have the right to access their personal data with entities, make corrections to it, and also restrict its usage.

► Penalties may be imposed for violating the data protection law.

► Any person below the age of 18 years will be considered a child under the law.

► Entities processing data of children will have to develop appropriate mechanisms for age verification and get parental consent.

► Data collecting entities will be responsible for data quality and storage limitation. However, accuracy of personal data is the responsibility of the individual.

► The committee has identified 50 statutes and regulations, which potentially overlap with the data protection framework.
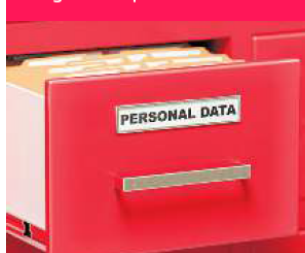
► The Aadhaar Act needs to be amended to bolster data protection, and the committee has suggested amendments to the Act.

*19 Provisions - Data Protection Bill*

**Safeguarding data**
A look at definitions of personal data and the right to be forgotten as per the draft bill

**WHAT IS PERSONAL DATA?**
■ Data relating to a natural person who is directly or indirectly identifiable, having regard to any characteristic, trait, attribute or any other feature of the identity of such natural person, or any combination of such features, or any combination of such features with any other information

**THE RIGHT TO BE FORGOTTEN**
As per the B.N.Srikrishna Committee report on data privacy:
■ The right to be forgotten refers to the ability of individuals to limit, de-link, delete, or correct the disclosure of personal information on the internet that is misleading, embarrassing, irrelevant, or anachronistic

■ Such disclosure may or may not be a consequence of unlawful processing by the data fiduciary. This is because the right flows from the general obligation of data fiduciaries to not only process lawfully, but also in a manner that is fair and reasonable

*20 Definition - Personal Data*

## 2. 5G

- **News**:
  - o TRAI gives nod for sale of 5G spectrum
  - o The government has set up a **high level forum to evaluate roadmaps and formulate a strategy** to adopt 5G in the country by 2020.

- **Facts**:
  - o 5G is a **wireless communication** and **next generation mobile networks technology** after 4G LTE networks.
  - o The final standard for 5G will be set up by the **International Telecommunications Union (ITU).**
  - o India lacks a **strong backhaul** to transition to 5G.
  - o Backhaul is a network that **connects cells sites to central exchange**.

## 3. MCR 1 Gene

- **News**: Mcr-1 gene seen in K. pneumoniae bacteria
- **Facts**:
  - o mobilized colistin resistance (mcr-1) gene that confers **multidrug-resistance** has now been reported in Klebsiella pneumoniae bacteria
  - o This gene endows **resistance against last hope antibiotic — colistin**
  - o The mcr-1 gene is **usually found in the plasmid** (small DNA in the cytoplasm)
  - o Colistin, also known as **polymyxin E**, is an antibiotic produced by certain strains of the bacteria Paenibacillus polymyxa.
  - o Colistin has also been used recently to treat **ventilator-associated pneumonia** (VAP) and bacteremia caused by MDR bacteria, such as P. aeruginosa, K. pneumoniae and A. baumannii.

## 4. Ebola

- **News**: The Ebola virus returned to the Democratic Republic of the Congo (DRC) just days after the World Health Organisation (WHO) announced, on July 24, that the Ebola outbreak had ended there.
- **Facts**:
  - o In 2014, Ebola first outbreak had struck three West African countries (Guinea, Liberia and Sierra Leone)
  - o **Ebola**:
    - ▪ is a **rare and deadly disease** in people and nonhuman primates
    - ▪ located mainly in **sub-Saharan Africa** caused by an infection with a group of viruses within the genus of ebolavirus.
      - Ebola virus (species Zaire ebolavirus)
      - Sudan virus (species Sudan ebolavirus)
      - Tai Forest virus (species Tai Forest ebolavirus, formerly Cote d'Ivoire ebolavirus)
      - Bundibugyo virus (species Bundibugyo ebolavirus)

## 5. India Space Missions

- **News**:
  - o India's first manned space flight - Gaganyaan - is expected to send three persons into the space for seven days and the spacecraft will be placed in a low earth orbit of 300-400 km.

- o India will launch its second lunar mission on January 3 next year which will land on the moon with a lander and rover

- **Facts**:

    - o **Gaganyaan**
        - ISRO last month conducted its **first 'pad abort'** test that was successful.
        - The **'pad abort'** test or **Crew Escape System** is an emergency escape measure that helps **pull the crew away from the launch vehicle when a mission has to be aborted**.
        - The crew will be **selected by Indian Air Force (IAF) and ISRO jointly** after which they will undergo training for two-three years.
        - It will conduct microgravity experiment during the mission.
        - India will become **fourth nation** in the world after the United States, Russia and China to send astronaut into space after US, Russia and China.
        - **Former Indian Air Force (IAF) pilot Rakesh Sharma was first Indian to travel to space**.
        - He was part of the Soviet Union's Soyuz T-11 expedition, launched in 1984, as part of the Intercosmos programme.
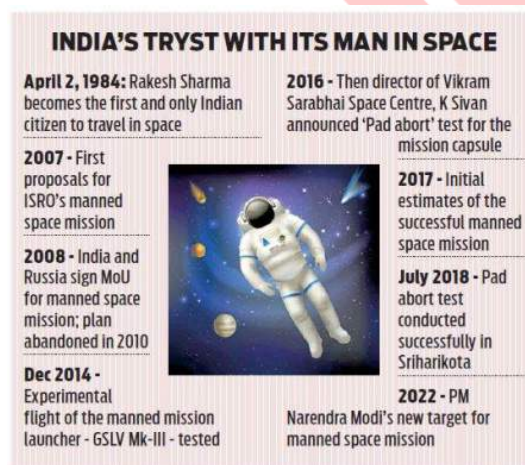


*21 India's path to Gaganyaan*

    - o **Chandrayan II**
        - Chandrayaan-2 will be ISRO's first time attempt to land a rover on the moon.
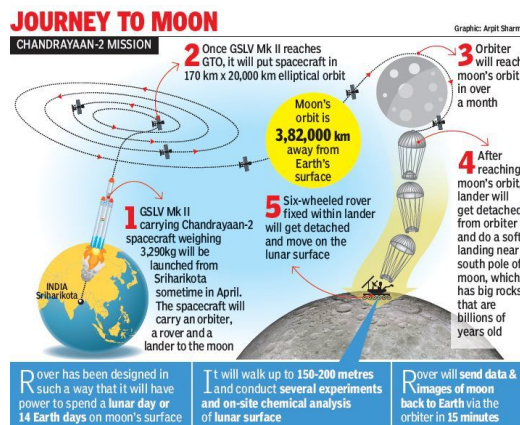


*22 Chandrayaan II*

**6. Digital North East Vision 2022**

- **News**: Ministry of Electronics and Information Technology (MeitY) recently released The Digital North East Vision 2022 in Guwahati, Assam.

- **Facts**:
    - The vision document emphasizes on **leveraging digital technologies to transform lives** of people of north east and enhance ease of living.
    - It **identifies eight digital thrust** areas namely, Digital Infrastructure, Digital services, Promotion of Electronics Manufacturing, Digital empowerment, Promotion of IT and ITes including BPOs, Digital Payments, Innovation & Startups and Cyber security.

**7. IMPRINT – II**

- **News**: Union Ministry of Human Resource Development (MHRD) has approved 122 new research project proposals worth Rs 112 crore for funding under its IMPRINT-II scheme.

- **Facts**:
    - IMPRINT is a **first-of-its-kind Pan-IIT and IISc joint initiative** to develop a (a) New Education Policy, and (b) Roadmap for Research.
    - To **solve major engineering and technology challenges** in selected domains needed by the country.

- **Additional Facts**:
    - Initially, under **IMPRINT-I, IITs and IISC, were asked to identify major areas where India is facing engineering and technology challenges**.
    - Now its scope also has been **expanded to include private institutions** along with IITs and IISc under IMPRINT-II.

**8. Repurpose used cooking oil (RUCO)**

- **News**: The Food Safety and Standards Authority of India (FSSAI) has launched RUCO (Repurpose Used Cooking Oil).
- **Facts**:
    - It is an initiative that will enable **collection and conversion of used cooking oil to bio-diesel**.



**FSSAI launches RUCO**
For a Green, Clean and Healthy India

On World Biofuel Day, the FSSAI launched RUCO-Repurpose Used Cooking Oil, an ecosystem that will enable the collection and conversion of used cooking oil to biodiesel.

The regulator is implementing an Education, Enforcement and Ecosystem (EEE) strategy to divert Used Cooking Oil (UCO) from the food value chain and curb current illegal practices.

Visit http://www.fssai.gov.in/dam/jcr:16baa8fb-8131-4480-a324-c9bd66be003f7/Guidance_Note_Plastic_Eggs_08_08_2018.pdf

*fssai*

*23 RUCO*

- **Additional Facts**:
    - **Total Polar Compounds (TPC)** - TPC is used to measure the quality of oil, level of TPC increases every time oil is re-heated.

o Higher level of TPC in cooking oil leads to health issues like hypertension, atherosclerosis, Alzheimer's disease and liver disease.

## 9. Thermal Battery Plant

- **News**: India became home to the world's **first-ever thermal battery plant** which was inaugurated recently in Amravati, Andhra Pradesh.

- **Facts**:
  - o It aims to create a **new energy storage form** that is expected to have commercial applications, while also maintaining a low carbon footprint, and being less dependent on external factors like weather.
  - o It will be owned by Bharat Energy Storage Technology Private Limited (BEST).
  - o It will have a **battery capacity of 1000MW** which is expected to be upgraded to a **10GW** capacity by 2025.
  - o It could provide energy solutions for electrical grids, transport and telecom services (help boost signal strength).
  - o It is **considered to be even better than solar energy** which cannot be charged or utilised to their optimum potential after sunset or even when the skies are densely clouded.

- **Additional Facts**:
  - o Conventional battery technology work on basis of electrical energy and is based on system of **charging and discharging cycles** that are **driven by electricity**.
  - o Thermal battery use **thermal energy to operate i.e. energy created by temperature differences**.
  - o The energy transfer in in this battery helps to store heat when heat travels from one part of battery setup to other.
  - o For this transmission, thermal battery consists of two parts viz. **cool zone** (sink) and **hot source** (source).

## 10. Bacteria Wolbachia

- **News**: Recently successful experiments were conducted in Australia, which demonstrated the positive **correlation between presence of Wolbachia bacteria in mosquitoes and reduced spread of diseases such as Malaria and Dengue.**

- **Facts**:
  - o Wolbachia bacteria is a **tiny bacterium** that is present in up to 60% of all species of insects, including several mosquito species.
  - o It is one of the world's **most common parasitic microbes** and possibly the most common reproductive parasite in the biosphere.
  - o But it is usually not present in the Aedes aegypti mosquito, the primary species responsible for transmitting dengue, chikungunya and Zika.
  - o When present in the mosquito, the viruses (E.g Zika Virus) cannot replicate and hence small numbers of wolbachia-carrying mosquitoes are released in target areas.
  - o Once Wolbachia carrying mosquitoes are released, they breed with wild mosquitoes and over time, the majority of mosquitoes carry Wolbachia.
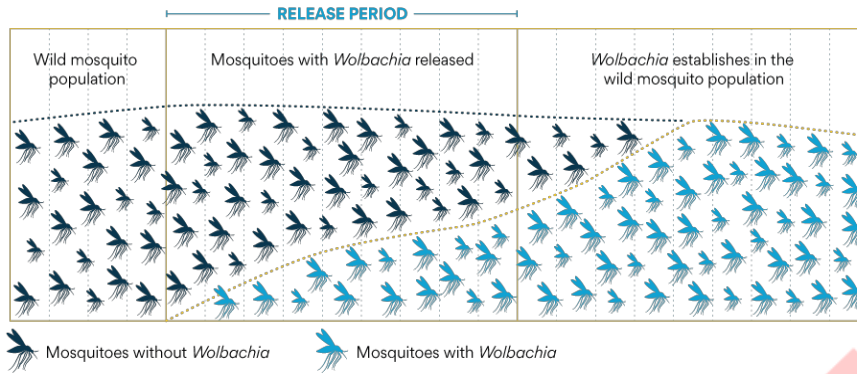
24 Transition in Areas where Mosquitoes with Wolbachia are released

### 11. Green Propellants by ISRO

- **News**: The Indian Space Research Organisation (ISRO) is developing **green propellants for future rockets**, considering the harmful effects of exhausts released by rockets on the earth's atmosphere.

- **Facts**:
  - ISRO has developed **eco-friendly solid propellant** based on **Glycidyl Azide Polymer (GAP)** as fuel and **Ammonium Di-Nitramide (ADN)** as oxidizer at the laboratory level, which will eliminate the emission of chlorinated exhaust products from rocket motors.
  - The **LOX/LH2 (liquid oxygen – liquid hydrogen) combination** is already being used in the **cryogenic upper stages of GSLV and GSLV Mk-III** launch vehicles.

- **Additional Facts:**
  - ISRO has successfully developed **ISROSENE**, which is a **rocket grade version of kerosene** as an **alternative to conventional hydrazine rocket fue**l.
  - The propellants that are being used now have a very reactive effect on the ozone layer due to the release of chlorinated exhaust products.



25 Green Alternatives to Rocket Propellants

### 12. iDEX

- **News**: Ministry of Defence (MoD) has introduced **"Innovations for Defence Excellence"** (iDEX) initiative to foster innovation in defense sector.

- **Facts**:

- o iDEX is aimed at creating an ecosystem which **fosters innovation and encourages technology development** in Defence by engaging R&D institutes, academia, industries, Startups and even individual innovators.
- o iDEX will be funded and managed by a 'Defence Innovation Organisation (DIO)'.
- o iDEX will **function as the executive arm of DIO**, carrying out all the required activities while DIO will provide high level policy guidance to iDEX.

## 13. Electric Propulsion System

- **News**: Recently, ISRO has planned to launch GSAT-20, based on electric propulsion technology which has helped in reducing the weight of the satellite to just 3.5 tonnes.

- **Facts**:
  - o Electric Propulsion System (EPS) can **reduce the dependence on chemical propellant** thereby increasing the payload capacity of the vehicle.
  - o Electric Propulsion system helps in **orbit correction of a satellite**.
  - o It helps in **maintaining a satellite on its path during its entire life duration**.
  - o This system provides **small but accurate thrust** to a satellite in its orbit.
  - o The new system **converts solar energy available in the space into electrical energy** and later to kinetic energy by generating thrust that propels a satellite.
  - o This system has been already tested by Russian space agency and NASA.
  - o It has immense capability to eventually lower the cost of launches.
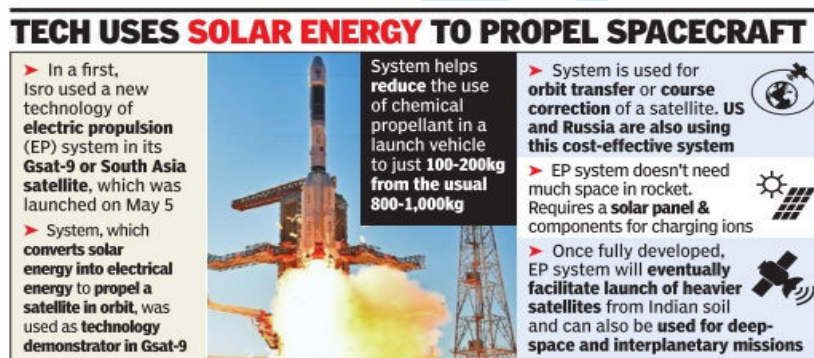


*26 EPS System*

## 14. Two Stage to Orbit (TSTO) Space Transportation System

- **News**: Recently India became the fifth nation to successfully conduct the **flight demonstration of a scaled down version of a winged-body reusable launch vehicle**.

- **Facts**:
  - o It is a stepping stone towards fully reusable **Two Stage to Orbit (TSTO) space transportation system**.
  - o TSTO launch vehicle can launch payload to **Lower Earth Orbit (LEO)** with 15 times reusability.
  - o It also validates the critical technologies such as autonomous navigation, guidance & control, reusable thermal protection system and re-entry mission management

**TYPES OF RESUABLE LAUNCH VEHICLES**

1. A single-stage-to-orbit (SSTO) vehicle reaches orbit from the surface of a body without jettisoning hardware, expending only propellants

2. A two-stage-to-orbit (TSTO or DSTO - Double/Dual-Stage-To-Orbit) launch vehicle is a spacecraft in which two distinct stages provide propulsion consecutively in order to achieve orbital velocity. It is intermediate between a three-stage-to-orbit launcher and a hypothetical single-stage-to-orbit (SSTO) launcher.

3. Semi-Resuable: The cheaper stage is jettisoned after the fuel is spent, while the vehicle goes to orbit and returns in a reusable state.

*27 Types of RLVs*

- **Additional Facts**:
  - o Low earth orbit is defined as an orbit within a locus extending from the earth's surface up to an altitude of 1,200 miles.
  - o Most communication applications use LEO satellites because it takes less energy to place the satellites into LEO.
  - o Also, they need less powerful amplifiers for successful transmission.
  - o As LEO orbits are not geostationary, a network of satellites are required to provide continuous coverage.

# ART & CULTURE

1. **Pingali Venkayya**

- **News:** Tributes were poured in for Pingali Venkayya on his 142nd death anniversary.

- **Facts:**

  o Designer of the **Indian National Flag** (Tricolour)

  o Served as soldier on British Army during **Anglo Boer War**

  o The flag was officially adopted by the Indian National Congress in its **1931 Karachi Session**.

2. **Panini Language Laboratory – Mauritius**

- **News:** External Affairs Minister Sushma Swaraj recently inaugurated **'Panini Language Laboratory'** at Mahatma Gandhi Institute (MGI) in Mauritius.

- **Facts:**

  o Panini - was a **Sanskrit grammarian** who gave a comprehensive and scientific theory of phonetics, phonology, and morphology

  o Panini is considered the **founder of the Sanskrit language and literature.**

3. **International Buddhist Conclave 2018**

- **News:** President of India has inaugurated the **sixth edition** of International Buddhist Conclave 2018 in New Delhi.

- **Facts:**

  o Biennially organised by Ministry of Tourism, Government of India

  o Theme **"Buddha Path – The Living Heritage". Japan** the partner country.

  o aims to **encourage prominent Buddhist heritage and pilgrim sites and highlight traditional and historical facets of Buddhism across the world** to boost tourism.

  o To be held at **New Delhi** and **Ajanta**

- **Additional Facts**:

  o **Buddha Path**

    ▪ extraordinary Teachings of the Buddha which is also called the **Middle Path, (known as Aṭṭhangiko Maggo in Pali)** which when practiced brings purity of mind and leads to Peace, Happiness and Harmony within and also in the Society as well

    ▪ also refers to the Eight Great Places of **Buddhist Heritage (in pali known as Aṭṭhamahāṭhānāni)**, Eight Places are connected with the important events of the life of the Buddha.

4. **Festival of Democracy**

- **News:** The President of India inaugurated **'Festival of Democracy'** in Thiruvananthapuram

- **Facts:**

  o **diamond jubilee celebrations** of Kerala legislative assembly.

5. **Heritage Rescue Initiative**

- **News:** ICOMOS launches initiative to save cultural heritage damaged in flood-hit Kerala.

- **Facts:**

- o **ICOMOS** (International Council on monuments and sites) - a **global monument conservation body**
- o **ICCROM** (International Centre for the Study of the Preservation and Restoration of Cultural Property) - intergovernmental organization working in service to its Member States to promote the **conservation of all forms of cultural heritage**, in **every region of the world**. It operates in the spirit of the **2001 UNESCO Universal Declaration on Cultural Diversity**, which states that "**Respect for the diversity of cultures, tolerance, dialogue and cooperation, in a climate of mutual trust and understanding are among the best guarantees of international peace and security.**"