



Drishti IAS Presents...

PT **SPRINT** 2023

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Note:

RHINOCEROS

World Rhino Day - 22nd September (declared by WWF in 2010)

5 Main Species of Rhino

Species	Found in	IUCN Red List Status	Habitat
African White	Africa	NT	Long/short grass Savannah
African Black	Africa	CE	Semi-Desert Savannah
Greater one-horned	Asia	Vu (CITES - Appendix I, WPA - Schedule I)	Tropical grassland
Javan	Asia	CE	Tropical, subtropical forests
Sumatran	Asia	CE	Same as Javan

Ujung Kulon National Park (a UNESCO WHS) is home to the last remaining wild Javan rhinos on Earth Greater One-Horned Rhino

Greater One-Horned Rhino

Only species found in India (aka Indian Rhino)



CHARACTERISTICS

- Largest of the 5 species
- Identified by a single black horn and a grey-brown hide with skin folds



Threats

- Poaching for horns
- Habitat loss
- Decreasing Genetic diversity



Protected Areas (India)

- **UP**
 - Dudhwa TR
- **West Bengal**
 - Jaldapara NP
 - Gorumara NP
- **Assam**
 - Pabitora WLS
 - Orang NP
 - Kaziranga NP (max no. of Rhinos: ~2400)
 - Manas NP



Conservation Efforts (India)

- National Rhino Conservation Strategy
- Indian Rhino Vision 2020 (launched in 2005)

New Delhi Declaration on Asian Rhinos 2019

Signed by 5 rhino range nations (India, Bhutan, Nepal, Indonesia and Malaysia)



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Note:

Police Reforms in India



CONSTITUTIONAL STATUS

- Police and Public Order: State subjects (7th Schedule)



NEED FOR REFORM

- Colonial Law
- Custodial Death
- Lack of Accountability
- Political Interference
- Poor Gender Sensitivity
- Communal/Caste Bias
- No Anti-Torture Law



RELATED DATA

- Police-People Ratio:** 153 police/100,000 people (Global benchmark: 222 police /100,000 people)
- Custodial Deaths:** 175 in 2021-2022 (as per MHA)
- Women's Share:** 10.5% of entire force (India Justice Report 2021)
- Infrastructure:** 1 in 3 police stations is equipped with CCTV (India Justice Report 2021)



IMPORTANT COMMITTEES/COMMISSION



RELATED INITIATIVES

- SMART Policing** (pan-India)
- Automated Multimodal Biometric Identification System (**AMBIS**) (Maharashtra)
- Real Time Visitor Monitoring System** (uses **AI and blockchain**) (Andhra Pradesh)
- CyberDome** (Tech R&D Centre) (Kerala)



CHALLENGES WITH POLICING

- Low Police-Population Ratio
- Political Superimposition
- Unsatisfactory Police-Public Relations
- Infra Deficit
- Corruption
- Understaffed/Overburdened

WAY FORWARD

- ↑ Police Budget, Resources
- ↑ Recruitment Process
- Implement Measures to Reduce Corruption
- ↑ Skills of Policemen
- Better Representation (Women, Minorities)



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Note:

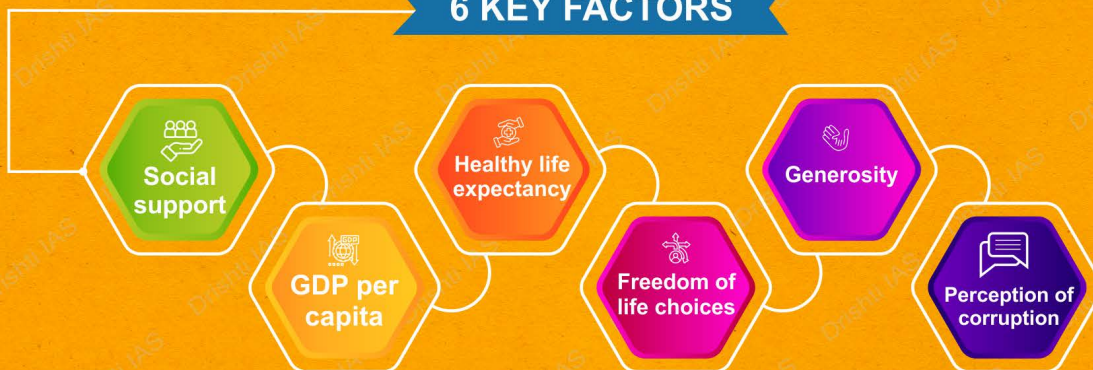
WORLD HAPPINESS REPORT 2023

First published in 2012, WHR is based on people's own assessment of their happiness + certain socioeconomic data

PUBLISHED BY

- UN Sustainable Development Solutions Network

6 KEY FACTORS



HAPPINESS SCORE

- 0-10 (10 being best)
- Based on an avg of **data of a 3-year period**

World Happiness Day - 20th March

GLOBAL PERFORMANCE

- Finland - World's happiest country (6th time in a row)
- Top 5 Countries:** Finland>Denmark>Iceland>Israel>Netherlands
- Ukraine** - Performance improved despite the War (92nd), Russia ranked 70th
- Afghanistan** - Bottom spot since 2020

Dystopia (in contrast to Utopia) - An imaginary country that has the world's least-happy people

INDIA'S RANK

- 126 out of 137** (2022 ranking - 136/146)
- Below **China** (74), **Pakistan** (108), **Sri Lanka** (112), **Myanmar** (117), **Bangladesh** (118) and **Nepal** (119)



Note:

UN SPECIALISED AGENCIES

UNSAAs are 15 autonomous international organizations working with the UN

Part I
FAO, UNIDO
and ICAO

FAO

- Estd. - 16th October 1945 (World Food Day)
- Headquarters - Rome, Italy
- Members - 194 countries (incl. India) + EU
- Sister Bodies - World Food Programme (WFP), IFAD
- FAO v/s WFP v/s IFAD:
 - » FAO is a knowledge org.; lead UN agency for technical expertise in food security, agriculture, forestry, fisheries etc.
 - » WFP is a humanitarian org.; provides food aid and logistical operations to save lives in crisis situations
 - » IFAD is a financial institution; funds rural development projects to improve nutritional level
- Flagship Publications:
 - » The State of World Fisheries and Aquaculture (SOFIA)
 - » The State of the World's Forests (SOFO)
 - » The State of Food Security and Nutrition in the World (SOFI)
 - » The State of Food and Agriculture (SOFA)
 - » The State of Agricultural Commodity Markets (SOCO)
- FAO's Globally Important Agricultural Heritage Systems (GIAHS) in India:
 - » Kuttanad Below Sea Level Farming System, Kerala
 - » Koraput Traditional Agriculture, Odisha
 - » Pampore Saffron Heritage, Kashmir

UN Industrial Development Organisation

- Estd. - 1966 (transformed into UNSA in 1985)
- Headquarters - Vienna, Austria
- Member States - 171 (India one of the founders)
- Functions - Tech-cooperation, advisory services and fostering partnerships
- Imp. Declarations - Lima Declaration (2013), Abu Dhabi Declaration (2019)

UNIDO
is a custodian
agency for 6
industry-related
indicators
under SDG 9

ICAO

- Estd. - 1944 (by Chicago Convention)
- Function - Set standards/procedures for peaceful global air navigation
- Headquarters - Montreal, Canada
- Members - 193 (incl. India)

ICAO is not an international aviation regulator; it can't arbitrarily close/restrict a country's airspace, shut down routes or condemn airports/airlines



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UN SPECIALISED AGENCIES

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Part II
UNWTO,
IFAD
and UPU

UN World Tourism Organisation

- Estd. - 1975
- Headquarters - Madrid, Spain
- Function -
 - » Promotion of responsible, sustainable & universally accessible tourism
 - » Implementation of the Global Code of Ethics for Tourism
- Member States - 160 (India is a member of UNWTO Executive Council for last 19 years and has chaired it twice)

World Tourism Day is celebrated on 27 September

International Fund for Agricultural Development

- Estd. - 1977 (an outcome of World Food Conference, 1974)
- Headquarters - Rome, Italy
- Function -
 - » Intl. financial institution
 - » Poverty eradication in rural areas of developing countries
- Member States - 177 (incl. India)
- Flagship Publication - Rural Development Report (annual)

Universal Postal Union

- Estd. - 1874 (by Treaty of Bern, 1874)
- Headquarters - Bern, Switzerland
- Function -
 - » Coordinates postal policies among member nations
 - » Sets rules for intl. mail exchanges
 - » Has an advisory/mediating/liaison role
- Member States - 192 (India joined in 1876)

UPU is the 2nd oldest intl. organization worldwide after ITU (estd. 1865)



Note:

UN SPECIALISED AGENCIES

UNSAAs are 15 autonomous international organizations working with the UN

Part III
ILO, WHO
and ITU

ILO

The only tripartite (govt., trade unions, employers) and the 1st affiliated UNSA

- Estd. - 1919 (Treaty of Versailles)
- Headquarters - Geneva, Switzerland
- Functions -
 - » Set labour standards
 - » Develop policies & programmes for promoting decent work for all
- Member States - 187 (India a founding member + permanent member of ILO Governing Body)

- International Labour Conference -
 - » Meets annually in Geneva
 - » aka International Parliament of Labour
- ILO Declaration on Fundamental Principles and Rights at Work 1998 (Principles) -
 - » Freedom of Association and The Right to collective bargaining
 - » Elimination of forced or compulsory labour
 - » Abolition of child labour
 - » Elimination of discrimination in respect of employment and occupation



WHO

WHO became functional on April 7, 1948 (now celebrated as World Health Day)

- Estd. - 1948
- Headquarters - Geneva, Switzerland
- Functions -
 - » Provides leadership on global health matters
 - » Shaping health research agenda
 - » Monitoring, assessing health trends
- Member States - 194 (incl. India)

WHO's regional office for SE Asia is located in New Delhi

- World Health Assembly - WHO's decision-making body, held yearly at Geneva
- Major Initiatives -
 - » UN Decade of Healthy Ageing (2021–2030)
 - » UN Decade of Action on Nutrition (2016–2025)
 - » GLASS Initiative (AMR)
 - » WHO 1+1 Initiative (2019) (TB)

ITU

- Estd. - 1865
- Headquarters - Geneva, Switzerland
- Functions -
 - » Facilitate intl. connectivity in communication networks
 - » Allocate global radio spectrum and satellite orbits

- Member States - 193 (India a regular member since 1952)
- Important Publication -
 - » Global Cybersecurity Index (GCI)



Note:

UN SPECIALISED AGENCIES

UNSAAs are 15 autonomous international organizations working with the UN

Part IV
WIPO, WMO
and IMO

WIPO



- Estd. - 1967 (joined UN in 1974)
- Headquarters - Geneva, Switzerland

**World Intellectual
Property Day - 26th April**

- Functions -
 - » Encourage creative activity, promote the protection of intellectual property (IP) throughout the world
 - » Shape balanced intl. IP rules
- Members - 193 (India joined in 1975)

- WIPO Treaties that India has ratified/acceded-
 - » Paris Convention (industrial property)
 - » Berne Convention (for Literary and Artistic Works)
 - » WIPO Performance and Phonograms Treaty
 - » Budapest Treaty
 - » Madrid Protocol for the International Registration of Marks
 - » Marrakesh Treaty (for Published Works by Visually Impaired Persons)
 - » WIPO Copyright Treaty
 - » Washington Treaty (IP for Integrated Circuits)
 - » Nairobi Treaty (for Olympic Symbol)
- Publication - Global Innovation Index



WMO

- Estd. - 1873 (originated from Intl. Meteorological Organization - Vienna International Meteorological Congress)
- » Became a UNSA by WMO Convention 1950

WMO is a UNSA for meteorology, operational hydrology & geophysical sciences

- Headquarters - Geneva, Switzerland

- Functions -
 - » Coordinate activities of National Meteorological/Hydrological Services in Member States
 - » Predictions concerning locust swarms, transport of pollutants (nuclear, toxic substances, volcanic ash)
- Member States - 193 (incl. India)

World Meteorological Day - 23rd March

IMO



- Estd. - 1948 (Convention on International Maritime Organization held in Geneva)
- Headquarters - London, United Kingdom
- Functions -
 - » Improve safety and security of intl. shipping
 - » Prevent pollution from ships
 - » Also involved in legal matters (liability, compensation issue)

- Member States - 174 (India joined in 1959)
- Important Treaties India has Ratified:
 - » MARPOL (1973) and its Protocols
 - » International Convention for the Safety of Life at Sea (SOLAS, 1974)

IMO lists India among the 10 states with the largest interest in intl. seaborne trade



Note:

UN SPECIALISED AGENCIES

UNSA are 15 autonomous international organizations working with the UN

Part V
IMF,
World Bank
and
UNESCO

INTERNATIONAL MONETARY FUND

- Estd. - 1944 (UN Bretton Woods Conference following Great Depression 1930s)
- Headquarters - Washington, DC, USA
- Functions -
 - » Global financial assistance
 - » Facilitate international trade
 - » Financing for developing countries
 - » Promotion of exchange rate stability
- Member States - 190 (India a founding member)

India's FM is the ex-officio Governor on the Board of Governors of IMF

- Special Drawing Rights (SDR) -
 - » IMF's intl. reserve asset to supplement the official reserves of its member countries (not a currency)

Currencies in SDR Basket - \$, €, £, ¥ (Yen) and CN¥ (Renminbi)

- IMF Quotas -
 - » Reflects a member country's relative position in world economy (India - 2.75%)
 - » Denominated in SDRs
- Flagship Publications -
 - » World Economic Outlook
 - » Global Financial Stability Report
 - » Fiscal Monitor
 - » External Sector Report

World Bank Group (WBG)

- Estd. - Same as IMF
- Headquarters - Washington, DC, USA

5 Institutions of WBG (estd.)

- International Bank for Reconstruction and Development (IBRD) aka **World Bank** (1944)
- International Finance Corporation (IFC) (1956)
- International Development Association (IDA) (1960)
- International Centre for the Settlement of Investment Disputes (ICSID) (1966)
- Multilateral Guarantee Agency (MIGA) (1988)

Membership of IMF is a prerequisite for membership of IBRD

- Twin Goals of WBG -
 - » Ending extreme poverty by 2030
 - » Boosting shared prosperity of the poorest 40% of the population in all countries

Functions

- Provide **loans, credits, and grants**
- **Investment, advice**, asset management to companies/govts.
- Low/No-interest loans to **Low-income countries**
- Settle investment-**disputes**
- **Insure lenders/investors** against political risks

- Member States - 189 (India a founding member of IBRD, IFC & IDA)
- » Ending extreme poverty by 2030

India is not a member of ICSID; claims it biased towards developed countries

- Major Publications -
 - » Human Capital Index
 - » World Development Report

UN Educational, Scientific and Cultural Organization (UNESCO)

- Estd. - 1945 [proposed by CAME (Conference of Allied Ministers of Education)]
- Headquarters - Paris, France
- Areas of Specialisation -
 - » Educational development (pre-school to higher education)
 - » Protecting heritage, fostering creativity
 - » Science for a sustainable future
- Global Priorities of UNESCO -
 - » Africa
 - » Gender Equality
- Member States - 193 (incl. India) + 11 Associate

USA is not a UNESCO member

- Important Initiatives -
 - » World Heritage Convention and WHS List (India has 40 WHS)
 - » Man and the Biosphere (MAB) Programme
 - » International Geoscience and Global Geoparks Programme (IGGP)
 - » Convention on **Intangible Cultural Heritage (ICH)**

India has served twice as a member of ICH Committee

- Important Reports -
 - » UNESCO Science Report
 - » Global Education Monitoring Report
 - » UNESCO State of the Education Report for India: Children with Disabilities



Note:

BUDDHISM



ORIGIN

- 6th century BC, based on the teachings of Gautam Buddha

MAIN FEATURES

- Essence - Attainment of enlightenment (Nibbana)
- Supreme Deity - None

PRINCIPLES

- Avoid the extremes; follow Madhyam Marg (middle path)
- Individualistic component (everyone is responsible for their own happiness)
- 4 Noble Truths:
 - Dukkha (suffering)
 - Samudya (cause of suffering)
 - Nirodha (suffering could be ended)
 - Atthanga Magga (8-fold path to achieve this)
- 8-Fold Path:
 - Right - view, intention, speech, action, livelihood, mindfulness, effort and concentration



BUDDHISM REJECTS

- Authenticity of Vedas
- Concept of soul (atman) (unlike Jainism)

MAJOR BUDDHIST TEXTS

- Sutta Pitaka (main teachings of Buddha - Dhamma)
- Vinaya Pitaka (rules of conduct for monks/nuns)
- Abhidhamma Pitaka (philosophical analysis)
- Other imp texts - Divyavadana, Dipavamsa, Mahavamsa, Milind Panha

Buddha's teachings were rehearsed, authenticated & divided in 3 Pitakas at the 1st Buddhist Council

These teachings were written down c. 25 BC in Pali

4 BUDDHIST COUNCILS

Buddhist Council	Patron	Venue	Chairman	Year
First	Ajatashatru	Rajgriha	Mahakashyapa	483 BC
Second	Kalashoka	Vaishali	Sabbakami	383 BC
Third	Ashoka	Patliputra	Mogaliputra	250 BC
Fourth	Kanishka	Kundalban (Kashmir)	Vasumitra	72 AD

Note:

UN HIGH SEAS TREATY

aka BBNJ (Biodiversity Beyond National Jurisdiction) Agreement

For the first time, UN members have agreed on a unified (legally-binding) treaty to protect biodiversity in the high seas

High Seas (HS)

All the saltwater bodies across Earth that aren't part of territorial sea/internal waters of a state

Background of Treaty

Demand for an updated framework to protect marine life in the High Seas, is about 20 years-old

Need to Protect HS

- Only 1.2% of HSs are currently protected
- 10% of global marine species at risk of extinction
- High exploitation due to commercial fishing, mining, acidification, pollution

The last int'l agreement on ocean protection was UNCLOS signed in 1982

This treaty is the 3rd "implementing agreement" under UNCLOS

KEY FEATURES

- Create a new body to manage conservation of ocean life and establish marine protected areas in the high seas
- Estd. ground rules for conducting EIAs for commercial activities in oceans

KEY PLAYERS

EU, US, UK and China (in brokering the deal)

SIGNIFICANCE

- Achieving the 30x30 Target set at UN CBD COP15
- Legal protection of 2/3rd of the ocean (+ livelihoods of coastal communities)
- Comprehensive protection of endangered species/habitats on >40% of Earth's surface

ROADBLOCK

How to fairly share marine genetic resources (MGR) & eventual profits among developed/developing nations



Ocean ecosystems produce half the oxygen we breathe, represent 95% of the planet's biosphere and soak up CO₂ (world's largest carbon sink)

Note:



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GAUTAM BUDDHA

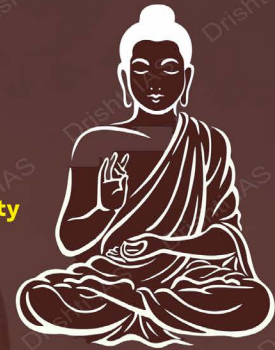
Believed to be 8th of the 10 incarnations of Lord Vishnu (Dashavatar)

BIRTH

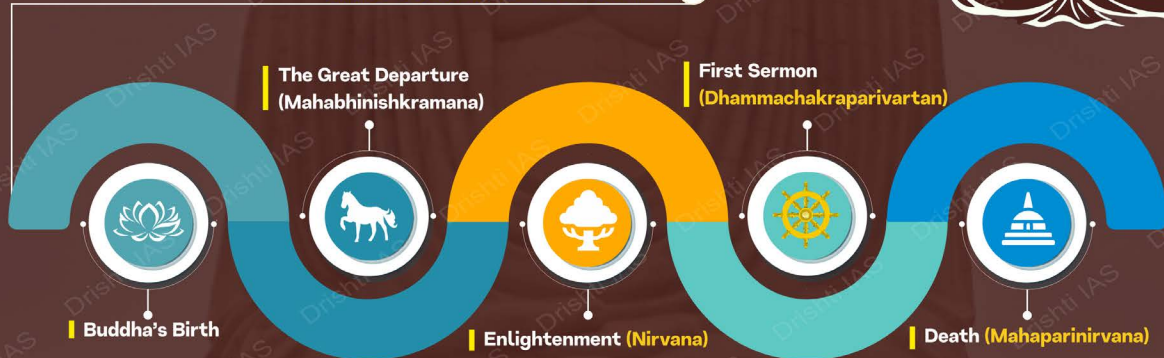
- Born as Siddhartha (563 BC)
- Birthplace - **Lumbini** (Nepal) near **Kapilavastu**

PARENTS

- Father - elected ruler of Kapilvastu; headed **Shakya republican clan**
- Mother - princess from **Koshalan dynasty**



IMPORTANT EVENTS



Buddha referred to himself as **Tathagata** (one who has thus come/gone) and has been addressed as **Bhagavat** (in Buddhist texts)

CONTEMPORARIES

- Vardhaman Mahavira
- Bimbisara
- Ajatshatru

OTHER IMPORTANT PLACES ASSOCIATED WITH BUDDHA

- **Bodh Gaya** (Enlightenment) (named Buddha after attaining enlightenment)
- **Sarnath** (first sermon)
- **Vaishali** (last sermon)
- **Kushinagara** (death place (487 BC))

Note:



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NASA-ISRO SYNTHETIC APERTURE RADAR (NISAR)

To be the first imaging radar satellite of its kind in space to systematically map Earth using 2 different frequencies (L-band and S-band)

SAR refers to a technique for producing fine-resolution images from a resolution-limited radar system where the radar moves in a straight line

BUILT UNDER

- NASA and ISRO's partnership agreement signed in 2014

EXPECTED LAUNCH

- 2024 from Satish Dhawan Space Centre

DURATION/LOCATION

- Min 3 years/near-polar orbit

NISAR will map the entire globe in 12 days

ISRO HAS PROVIDED

- The S-band radar (NASA: L-band)
- GSLV launch system
- Spacecraft

S-band radars operate on a wavelength of 8-15 cm and a frequency of 2-4 GHz and are useful for near and far range weather observation

L-band radars operate at a wavelength of 15-30 cm and frequency 1-2 GHz and are mostly used for clear air turbulence studies

SOCIETAL BENEFITS

- Observe subtle changes in Earth's surface
- Spot warning signs of natural disasters
- Track groundwater levels, flow rates of glaciers/ice-sheets
- Monitor forest/agricultural regions

NISAR WILL STUDY

Earth's Dynamic Surface and Interior

Earth's Cold Regions

Terrestrial Ecosystems

Water

Note:

ANTIMICROBIAL RESISTANCE



The ability of microorganisms to resist the effects of antimicrobial drugs

CAUSES OF ↑ AMR

- Poor infection control/sanitation
- Antibiotic overuse
- Genetic mutations of microbe
- Lack of investment in R&D of new antimicrobial drugs

Microbes that develop AMR are called 'Superbugs'

IMPACTS OF AMR

- ↑ Risk of spreading infections
- Makes infections harder to treat; prolonged illness
- ↑ Healthcare costs

EXAMPLE

- Carbapenem antibiotics stop responding due to AMR in *K. pneumoniae*
- AMR *Mycobacterium tuberculosis* causing Rifampicin-Resistant TB (RR-TB)
- Drug-resistant HIV (HIVDR) making antiretroviral (ARV) drugs ineffective

RECOGNITION BY WHO

- Identified AMR as **one of the top 10 threats** to global health
- Launched **GLASS** (Global Antimicrobial Resistance and Use Surveillance System) in 2015

INDIA'S INITIATIVES AGAINST AMR

- Surveillance of AMR in microbes causing **TB, Vector Borne diseases, AIDS etc.**
- **National Action Plan on AMR** (2017) with One Health approach
- **Antibiotic Stewardship Program** by ICMR

New Delhi metallo-β-lactamase-1 (NDM-1) is a bacterial enzyme, emerged from India, that renders all current β-lactam antibiotics inactive

Note:

LOK SABHA SPEAKER



The **Constitutional/Ceremonial Head** of LS who presides over its day-to-day functioning

What **Speaker/Deputy Speaker** is for LS, the **Chairman/Dy Chairman** is for RS

ORIGIN IN INDIA

- 1921 (Govt Act of 1919) under the name **President** and **Dy President**

*Govt Act of 1935 changed this nomenclature to **Speaker and Deputy Speaker***

ELECTION (BOTH SPEAKER & DY SPEAKER)

- Article 93, Part V
- By a **simple majority**
- Re-election - Eligible

ELECTION CRITERIA

- Should be a member of LS
- No specific qualifications
- Generally, belongs to the ruling party

TENURE

- **5 years** (till immediately before first meeting of the next LS)

Speaker does not vacate his/her office upon dissolution of LS

POWERS

- **Final interpreter** of Constitutional provisions in LS; his/her **rulings are binding** in nature
- **Presides over a joint sitting** of the two Houses of Parliament
- Can adjourn the House/suspend the meeting **in absence of Quorum**
- **Power of Casting vote** to resolve a deadlock
- **Decides:**
 - if a bill is (not) a **money bill**
 - **Disqualification** of LS members (under 10th Schedule) (granted via **52nd Amendment 1985**)

REMOVAL (CONDITIONS)

- If s/he **ceases to be a member** of LS
- **Written Resignation** to Dy Speaker
- **Removed by Effective Majority**

Note:

CUSTODIAL DEATH



CD is a death that occurs while a person is in the custody of law enforcement officials or in a correctional facility

CAUSES

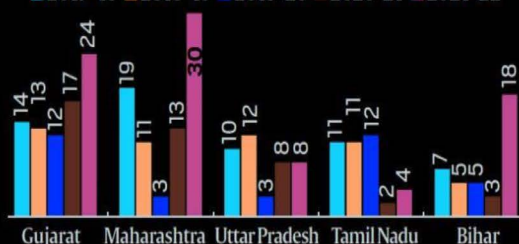
- Use of excessive force, (medical) neglect, abuse by authorities etc.

HIGHEST CDs IN INDIA (2017-18 to 2021-22)

- Uts: Delhi (29), J&K (4)
- States: Gujarat (80), Maharashtra (76), UP (41), TN (40) and Bihar (38)

STATES WITH HIGHEST CUSTODIAL DEATHS

■ 2017-18 ■ 2018-19 ■ 2019-20 ■ 2020-21 ■ 2021-22



LEGAL PROVISIONS

- CrPC Section 41 - Amended in 2009; arrests and detentions for interrogation to have reasonable grounds and documented procedures
- IPC Sec 302, 304, 304A, and 306 - Include crime of custodial torture
 - Sec 330, 331 - Punishment for injury inflicted for extorting confession

Complaints of such human rights violations are received by the NHRC under Protection of Human Rights Act, 1993

MAJOR ISSUES REGARDING CDs

- No anti-torture legislation
- Opaque, poor prison system
- Excessive force used against marginalised/protesters
- Lengthy, expensive judicial processes

India signed the UN Convention against Torture (1985) in 1997 but hasn't ratified it yet

CD V/S FUNDAMENTAL RIGHTS

- Protection from torture (Article 21)
- Protection against arrest and detention in certain cases, Right to Counsel (Article 22)

SOLUTIONS

- Multi-pronged strategy encompassing legal enactments, technology, accountability, training and community relations
- Taking stringent action against personnel breaching the commandments issued by the SC in *D.K. Basu v. State of West Bengal (1997)* (such as - All police personnel to wear name tags clearly indicating their name, designation)

Note:

TRANS FATTY ACIDS (TFA)



These are unsaturated fatty acids that come from either natural or industrial sources.



Fat	A major source of energy and helps body absorb vitamin
Unsaturated Fats	Good fats; usually come in the form of liquid oils, not solid fats. • From Plants (Vegetable oil, nuts, seeds)
Saturated Fats	Not as harmful as trans fats if consumed in moderation; generally take a solid form • From red meat, butter, cheese, coconut oil, palm oil

- ➔ **Natural TFA:**
 - Beef fat and dairy fat in small amounts
- ➔ **Industrial TFA:**
 - Trans fats, also called partially hydrogenated oils, are created when hydrogen is added to vegetable oil to make it more solid.
 - E.g. Vanaspati, margarine and bakery shortenings
- ➔ **Issue Associated:**
 - Most harmful fats, increase disease risk, even if consumed in small quantities
 - ↑bad LDL (low-density lipoprotein) and ↓ good HDL

DEBATE ON TRANS FATS

ARGUMENTS FOR:

- ➔ **Natural form** of trans fat **not** harmful to humans
- ➔ **Cheap and easy substitute** of Pure Ghee
- ➔ **Preserves food** for longer duration

ARGUMENTS AGAINST:

- ➔ Worst type of fat for the heart, blood vessels, rest of the body
- ➔ Associated with obesity, infertility, certain types of cancers, high B.P.
- ➔ Saturated vegetable fats like palm, palm kernel, and coconut oils can be suitable alternatives

WHO estimates that 50,00,000 lives are lost due to premature deaths from coronary heart disease which are attributable to consumption of trans-fats.

EFFORTS TO REDUCE TFA INTAKE:

- ➔ **By FSSAI:**
 - Goal of "Freedom from Trans Fat @75"
 - "Trans Fat Free" logo - Voluntary labelling to promote TFA-free products
 - "Heart Attack Rewind" - Mass media campaign to eliminate industrially produced trans fats
- ➔ **By WHO:**
 - **REPLACE Campaign** - Eliminate industrially produced trans fats by 2023
 - **Recommendation** - Set limits on industrially produced trans fat or ban partially hydrogenated oils

Note:

SAROJINI NAIDU

(February 13, 1879 - March 2, 1949)



Drishti IAS

BRIEF PROFILE

- ◊ A Political activist, Feminist, Poet
- ◊ Known as **Bharatiya Kokila (The Nightingale of India)**

Her birth anniversary is observed as **National Women's Day (13th February)**

CONTRIBUTION TO INDIAN FREEDOM MOVEMENT

- ◊ Joined the Indian National Movement in 1905 during the Partition of Bengal
- ◊ **First Indian Woman President** of Indian National Congress in 1925 (preceded by the English feminist Annie Besant in 1917)
- ◊ Accompanied Gandhi to London for the inconclusive **second session of the Round Table Conference** for Indian-British cooperation (1931)
- ◊ A significant leader of Salt Satyagraha Movement (1930); Led **Dharasana Satyagraha**
- ◊ Represented India at Various International Forums


OTHER CONTRIBUTION

- ◊ **A Renowned Poetess:** The Golden Threshold (1905), The Bird of Time (1912), The Broken Wing (1912), In the Bazaars of Hyderabad (1912)
- ◊ **Advocated Women Rights:** Member of the All India Women's Conference (founded in 1927)
- ◊ **India's First Woman Governor:** She was appointed the governor of Uttar Pradesh after India achieved independence in 1947


" We want deeper sincerity of motive, a greater courage in speech and earnestness in action"



Note:



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International Day for Women and Girls in Science

ABOUT

- Celebrated **every year on February 11** since 2015
- Observed by the United Nation to promote the full and equal access and participation of women in Science, Technology, Engineering and Mathematics (STEM) fields.

THEME 2023

Innovate. Demonstrate. Elevate. Advance. Sustain (I.D.E.A.S.)


STATUS OF WOMEN PARTICIPATION IN THE SCIENCE SECTOR

- According to the All India Survey on Higher Education 2020-2021, number of science researchers in India has doubled from 30,000 in 2014 to over 60,000 in 2022.
- Women's participation is the **highest in biotechnology at 40% and medicine at 35%.**

INITIATIVES TAKEN FOR WOMEN IN SCIENCE


- Gender Advancement for Transforming Institutions (GATI):**
 - To develop a comprehensive Charter and a framework for assessing Gender Equality in STEM.
- Vigyan Jyoti Scheme:**
 - To create a level-playing field for the meritorious girls in high school to pursue STEM in their higher education.
- Indo-US Fellowship for Women in STEMM (WISTEMM) program:**
 - Women scientists can work in research labs in the US.
- Consolidation of University Research for Innovation and Excellence in Women Universities (CURIE) Programme:**
 - Improving R&D infrastructure and establishing state-of-the-art research facilities in order to create excellence in S&T in women universities.

Women who Shaped India's Scientific History




Anandibai Gopalrao Joshi (1865-1887)

- First Indian female to study and graduate with a degree in western medicines from the United States.
- Believed to be the first women to set foot on American soil from India.




Kamala Sohanie (1911-1998)

- First Indian woman to receive a PhD in a scientific discipline.
- Discovered the enzyme 'Cytochrome C' (helps in energy synthesis).




Kadambini Ganguly (1861-1923)

- Becomes India's first female doctor & practitioner of western medicine in the whole South Asia.




Anna Mani (1918-2001)

- First woman to join the Meteorological department.




Bibha Chowdhary (1913-1991)

- First woman high energy physicist of India and the first woman scientist at the TIFR.
- IAU honoured her by naming a white yellow dwarf star after her name.




Kamal Ranadive (1917-2001)

- Established India's first tissue culture research laboratory at the Indian Research Centre in Mumbai.




Edavaleth Kakkat Janaki Ammal (1897-1984)

- Made significant contributions to genetics, evolution, phytogeography and ethnobotany.
- First director of the Central Botanical laboratory at Allahabad.




Sanghamitra Bandyopadhyay

- She has been conferred the Padma Shri in 2022.
- She is the first woman director of the Indian Statistical Institute.



Debala Mitra (1925-2003)

- First Indian archaeologist served as Director General of the Archaeological Survey of India.
- Explored and excavated several Buddhist sites.



Ms. Sujatha Ramdorai

- She was awarded the Padma shri award in 2023.
- She became the first Indian to win the prestigious ICTP Ramanujan Prize in 2006.
- She was also awarded the Shanti Swarup Bhatnagar Award, the highest honour in scientific fields by the Indian Government in 2004.
- She is also the recipient of the 2020 Krieger-Nelson Prize for her exceptional contributions to mathematics research

Note:





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UNION BUDGET 2023-24

First Budget of Amrit Kaal

PART - A

BUDGET AND AMRIT KAAL

- **Vision - Empowered, Inclusive economy** (Tech-driven, knowledge-based with a robust financial sector)

SAPTARISHIS OF BUDGET

- **Inclusive Development:**
 - **Agriculture:**
 - ◆ Digital Public Infrastructure for agriculture
 - ◆ Fund to be estd for Agri-startups
 - ◆ Atmanirbhar Clean Plant Programme for horticultural crops
 - ◆ Millets aka 'Shree Anna'
 - **Education and Skilling**
 - ◆ Revamped Teacher Training
 - ◆ National Digital Library to be estd.
 - ◆ Physical Libraries at Panchayat/Ward levels
 - **Health:**
 - ◆ 157 New Nursing colleges
 - ◆ Mission to eliminate Sickle Cell Anaemia
- **Reaching the Last Mile:**
 - ◆ Aspirational Blocks Programme launched on lines of Aspirational Districts Programme
 - ◆ PVTG Development Mission coming up (fund - Rs 15,000 cr)
 - ◆ Bharat Shared Repository of Inscriptions (Bharat SHRI) to be estd.
- **Infrastructure and Investment:**
 - ◆ Capex for Infra ↑ by 33% to Rs 10 lakh cr (now 3.3% of GDP)
 - ◆ 50-year interest free loan to state govts extended for 1 year
 - ◆ Urban Infrastructure Development Fund to be estd. for Tier 2/3 cities

- **Unleashing the Potential:**
 - ◆ Companies Act 2013 amended (3,400 legal provisions decriminalised)
 - ◆ Jan Vishwas Bill introduced for trust-based governance
 - ◆ e-Courts Phase III
- **Green Growth:**
 - ◆ National Green Hydrogen Mission
 - ◆ GOBARDHAN Scheme - 500 new 'waste to wealth' plants
 - ◆ PM PRANAM - incentivise states/UTs to use alternative fertilisers
 - ◆ MISHTI initiative for mangrove plantation
- **Youth Power:**
 - ◆ PM Kaushal Vikas Yojana 4.0 to be launched
 - ◆ Direct Benefit Transfer under National Apprenticeship Promotion Scheme
- **Financial Sector:**
 - ◆ Credit guarantee scheme for MSMEs revamped
 - ◆ Additional collateral-free loan of Rs 2 lakh cr
 - ◆ Cost of Credit ↓ by 1%
 - ◆ Mahila Samman Savings Certificate - one-time new small savings scheme - for 2 years (March 2025)

FISCAL MANAGEMENT

- **Fiscal deficit:**
 - ◆ 6.4% of GDP (FY 22-23)
 - ◆ Estimated - 5.9% of GDP (FY 23-24)
 - ◆ Target - <4.5% (by FY 25-26)
- States allowed to have a deficit of 3.5% of their GSDP

Note:



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UNION BUDGET 2023-24

PART - B

DIRECT TAXATION

- ➔ **Personal Income Tax:**
 - Rebate limit ↑ to Rs. 7 lakh
 - No. of tax slabs ↓ to 5
 - New tax exemption limit = Rs. 3 lakh
- ➔ **Standard Deduction ↑ for:**
 - Salaried individuals: Rs. 50,000
 - Family pension up to Rs. 15,000
- ➔ **Presumptive Taxation Limit ↑:**
 - For MSMEs (condition: cash amount is < 5% of total gross turnover)

EEE Category - Entire investments, income and interests are exempted from tax

Income Tax Slabs under new tax regime	Income Tax rate under new tax regime
Rs 0 to Rs 3 lakh	0%
Rs 3 lakh to 6 lakh	5%
Rs 6 lakh to 9 lakh	10%
Rs 9 lakh to Rs 12 lakh	15%
Rs 12 lakh to Rs 15 lakh	20%
Income Above Rs 15 lakh	30%

- ➔ **For Cooperatives:**
 - New manufacturing cooperatives - tax rate: 15%
- ➔ **Exemptions (Income Tax):**
 - All statutory authorities/bodies/commissions for housing, town and village development/regulation
 - Agniveers enrolled in Agnipath Scheme
 - Agniveer Fund has Exempt-Exempt-Exempt (EEE) status

INDIRECT TAXATION

- ➔ **Custom Duties:**
 - ↑ on gold, platinum articles & silver dore/bars/articles
 - ↑ National Calamity Contingent Duty on cigarettes: ~16%
 - **Exemptions:**
 - ◆ Compressed biogas in blended CNG
 - ◆ Testing agencies that import vehicles, automobile parts
 - ◆ Denatured ethyl alcohol used in the chemical industry.
- ➔ **Legislative Changes in Customs Laws:**
 - **Revised Customs Act, 1962** - 9-month deadline for Settlement Commission to make a final decision on an application
 - **Central GST Act, 2017** - changes in minimum and compounding amounts for tax etc.

Note:



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UNION BUDGET



A statement of the estimated receipts and expenditure of the Govt in an FY

ARTICLE 112 (PART V)

- President of India to present the **Annual Financial Statement** for each FY before both Houses of Parliament

The term 'Budget' is not mentioned anywhere in the Constitution of India

NODAL BODY FOR PREPARING BUDGET

- **Budget Division** (Dept of Economic Affairs, Ministry of Finance) in **consultation with NITI Aayog** and concerned Ministries

The first Budget of Independent India was presented in 1947

MAJOR COMPONENTS OF BUDGET

- Estimates of **revenue and capital receipts**
- **Ways and means** to raise the revenue
- Estimates of **expenditure**
- Actual receipts/**expenditures of closing FY** (+ deficit/surplus)
- **Economic/financial policy** of upcoming FY

Till 2017, the Govt of India had 2 budgets - Railway Budget and General Budget

STAGES OF BUDGET ENACTMENT

- Presentation
- **General discussion**
- **Scrutiny** by Dept Committees
- **Voting** on Demands for Grants
- Passing an **Appropriation Bill**
- Passing of **Finance Bill**

What else does the Constitution of India provide for the Budget?

- **Without the recommendation of the President:**
 - No demand for a grant can be made
 - No money bill imposing tax can be introduced
- No money can be withdrawn from the Consolidated Fund of India except under **appropriation** made by law
- **Role of Parliament:**
 - Money/Finance Bill (involving taxation) - introduced only in LS
 - Vote on the demand for grants - RS has no such power
 - Money/Finance Bill - to be returned to LS by RS in 14 days
 - LS may/may not accept the recommendations made by RS

Note:



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ATMOSPHERE AND ITS LAYERS



ATMOSPHERE

- One of the main components of Earth's interdependent physical system
- It is composed of about 78% nitrogen, 21% oxygen, and 1% other gases

LAYERS

Troposphere:

- Extends from Earth's surface upto 12 kilometers
- The lowest part of the atmosphere- the part we live in
- Temperature in the troposphere decreases with height
- The top of the troposphere is called tropopause
- Densest atmospheric layer
- Contains about 75% of all of the air in the atmosphere, and 99% of water vapour (which forms clouds and rain)

Stratosphere:

- Located between 12 and 50 kilometers above Earth's surface
- Contains much of the ozone in the atmosphere
- Ozone molecules in this layer absorb ultraviolet (UV) radiation from the Sun, resulting in an increase in temperature
- It is nearly cloud- and weather-free
- It's the highest part of the atmosphere that jet planes can reach

Mesosphere:

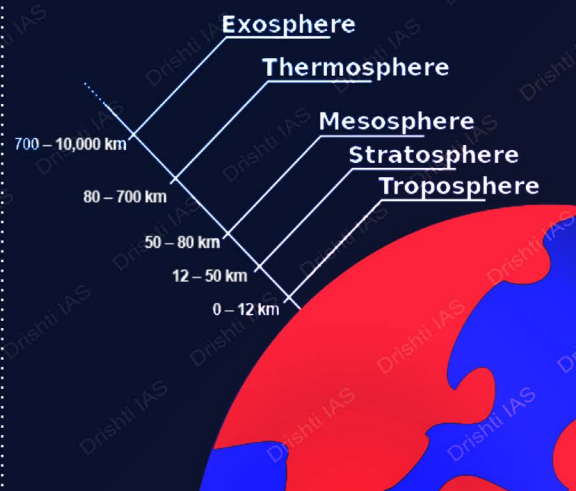
- Located between about 50 and 80 kilometers above Earth's surface
- The top of this layer is the coldest place found within the Earth system
- It forms noctilucent clouds, the highest clouds in Earth's atmosphere
- Most meteors burn up in this atmospheric layer
- Sounding rockets and rocket-powered aircraft can reach the mesosphere

Thermosphere:

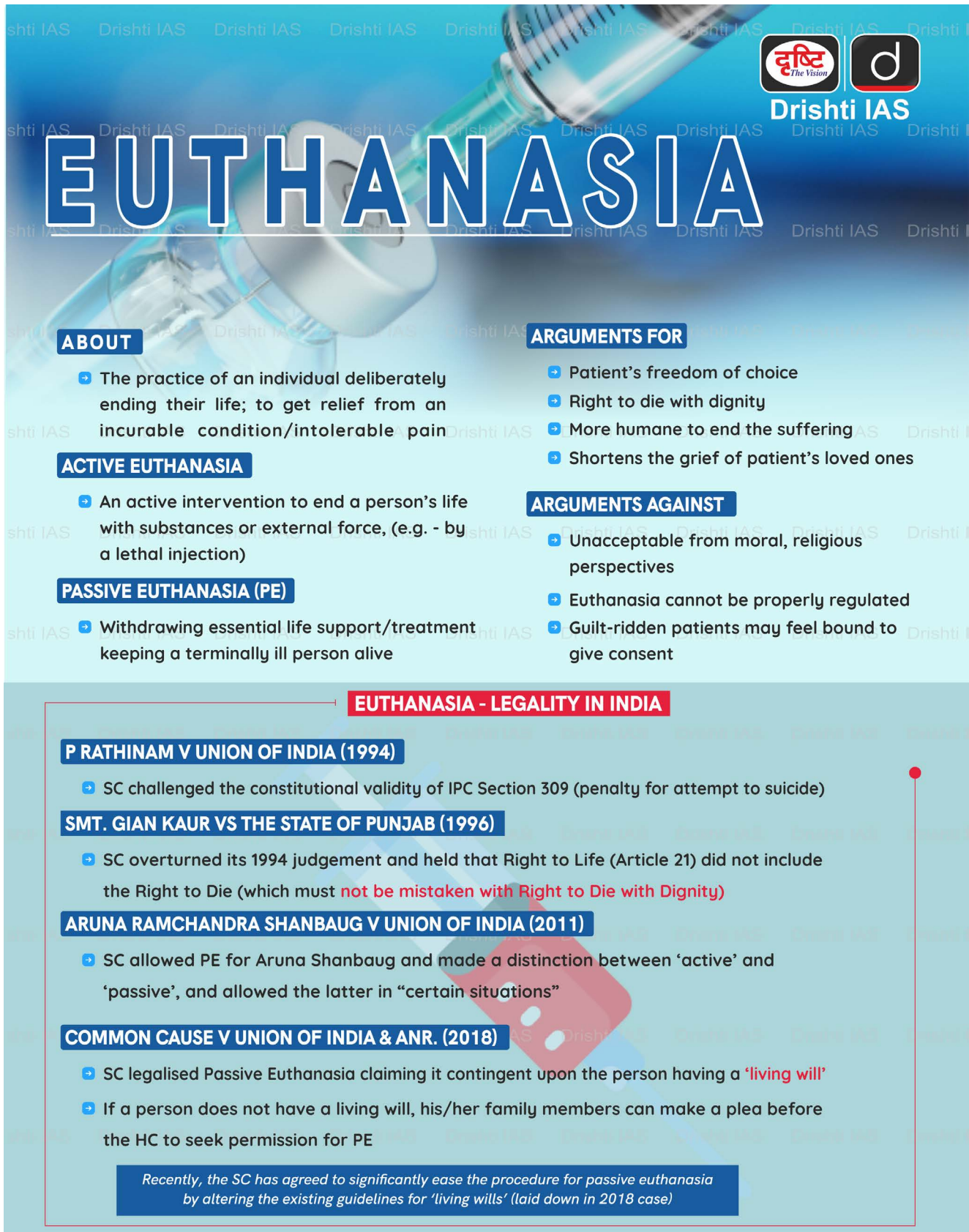
- Located between about 80 and 700 kilometers above Earth's surface
- Its lowest part contains the ionosphere
- The temperature of the thermosphere varies between night and day and between the seasons
- The aurora borealis (northern) and aurora australis (southern) are sometimes seen here

Exosphere:

- Located between 700 and 10,000 kilometers above Earth's surface.
- The highest layer of Earth's atmosphere.
- There's no weather at all in this layer.
- Most Earth satellites orbit in this layer.
- At the bottom of the exosphere is a transition layer called the thermopause.



Note:



EUTHANASIA

ABOUT

- The practice of an individual deliberately ending their life; to get relief from an incurable condition/intolerable pain

ACTIVE EUTHANASIA

- An active intervention to end a person's life with substances or external force, (e.g. - by a lethal injection)

PASSIVE EUTHANASIA (PE)

- Withdrawing essential life support/treatment keeping a terminally ill person alive

ARGUMENTS FOR

- Patient's freedom of choice
- Right to die with dignity
- More humane to end the suffering
- Shortens the grief of patient's loved ones

ARGUMENTS AGAINST

- Unacceptable from moral, religious perspectives
- Euthanasia cannot be properly regulated
- Guilt-ridden patients may feel bound to give consent

EUTHANASIA - LEGALITY IN INDIA

P RATHINAM V UNION OF INDIA (1994)

- SC challenged the constitutional validity of IPC Section 309 (penalty for attempt to suicide)

SMT. GIAN KAUR VS THE STATE OF PUNJAB (1996)

- SC overturned its 1994 judgement and held that Right to Life (Article 21) did not include the Right to Die (which must **not be mistaken with Right to Die with Dignity**)

ARUNA RAMCHANDRA SHANBAUG V UNION OF INDIA (2011)

- SC allowed PE for Aruna Shanbaug and made a distinction between 'active' and 'passive', and allowed the latter in "certain situations"

COMMON CAUSE V UNION OF INDIA & ANR. (2018)

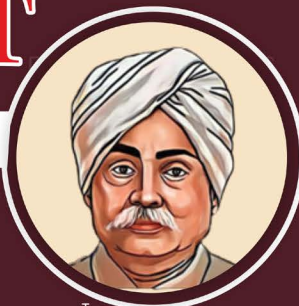
- SC legalised Passive Euthanasia claiming it contingent upon the person having a '**living will**'
- If a person does not have a living will, his/her family members can make a plea before the HC to seek permission for PE

Recently, the SC has agreed to significantly ease the procedure for passive euthanasia by altering the existing guidelines for 'living wills' (laid down in 2018 case)

Note:

LALAJPAT RAI

28 January 1865 – 17 November 1928



BRIEF PROFILE

- Also called **Punjab Kesari**
- Influenced by **Swami Dayananda Saraswati** - joined **Arya Samaj** in Lahore
- **Lal-Bal-Pal trio** (extremist leaders) with **Bipin Chandra Pal** and **Bal Gangadhar Tilak**
- Involved with the **Hindu Mahasabha**

POLITICAL CONTRIBUTIONS

- 1907 - **Deported to Burma without trial** but returned due to lack of evidence
- 1917 - Founded **Home Rule League of America** (New York)
- 1920 - **Presided INC (special) session (Calcutta)** where Gandhiji moved the **Non-Cooperation resolution**
- 1920 - Elected (**first**) President of the **All India Trade Union Congress**
- 1926 - Elected **deputy leader** of the **Central Legislative Assembly**
- 1928 - Moved a resolution in the assembly **against Simon Commission**

SOCIAL CONTRIBUTIONS

- 1886 - Founded **DAV Movement**
- 1897 - Founded **Hindu Relief movement** (to help famine-stricken people and prevent them falling into the clutches of the missionaries)
- 1921 - Founded the **Servants of People Society** (to enlist, train national missionaries for the service of the motherland)

Note: Servants of People Society is different from Servants of Indian Society founded by GK Gokhale in 1905

OTHER CONTRIBUTIONS

- Institution -
 - 1894 - Co-founded **Punjab National Bank**
- Important Literary Works -
 - 1908 - **The Story of My Deportation**
 - 1915 - **Arya Samaj**
 - 1916 - **Young India, The United States of America: A Hindu's Impression**
 - 1917 - **England's Debt to India: A Historical Narrative of Britain's Fiscal Policy in India**
 - 1928 - **Unhappy India**

DEATH

- 1928 - Died of injuries due to the brutal lathi-charge by James Scott while leading a silent protest against Simon Commission in Lahore



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Note:

EARTHQUAKE



ABOUT

- Shaking of the earth; caused due to release of energy, generating **seismic waves in all directions**

EARTHQUAKE WAVES

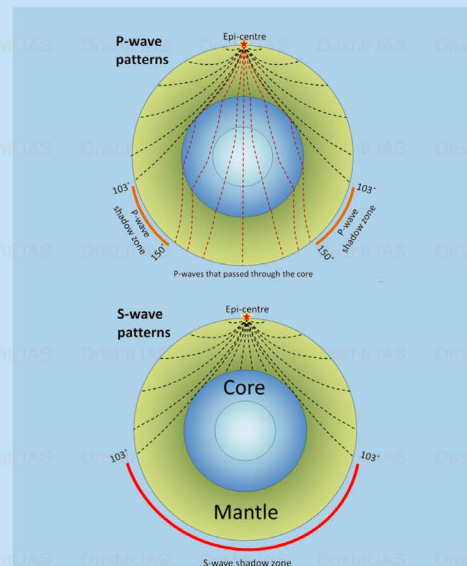
- Body Waves:** Move in all directions travelling through the body of the earth
 - P Waves:** Move faster, First to arrive at surface, Similar to sound waves, Travel through gaseous, liquid and solid materials
 - S Waves:** Arrive at surface with some time lag, Travel only through solid materials
- Surface Waves:** Last to report on seismographs, More destructive, Cause displacement of rocks
 - Love Waves:** Same motion as S-waves (horizontal) without vertical displacement, Sideways motion perpendicular to the direction of propagation, Faster than Rayleigh waves
 - Rayleigh Waves:** Cause the ground to shake in an elliptical pattern, Spread out the most of all seismic waves, Move vertically and horizontally in a vertical plane

HYPOCENTER

- Location where the earthquake starts (below earth's surface)

EPICENTER

- Location right above the Hypocenter (on the earth's surface)



CAUSES OF EARTHQUAKES

- Release of energy along a **Fault/Fault Zones** (break in the crustal rocks)
- Movement of **tectonic plates** (most common)
- Volcanic eruption** (stress changes in rock-injection/withdrawal of magma)
- Human activities** (mining, explosion of chemical/nuclear devices etc.)

MEASURING EARTHQUAKE

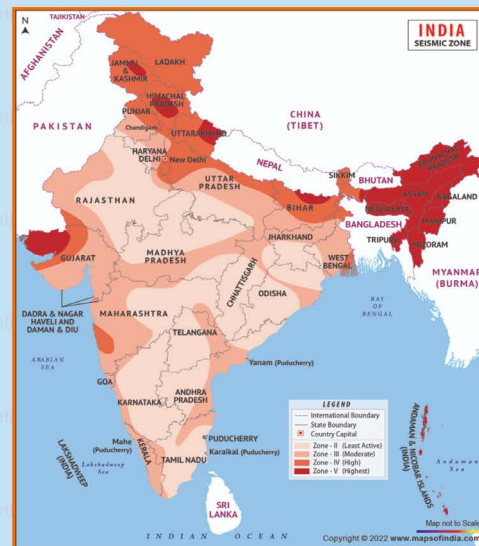
- Seismometers** - Measures seismic waves
- Richter Scale** - Measures magnitude (energy released; range: 0-10)
- Mercalli** - Measures intensity (visible damage; range: 1-12)

DISTRIBUTION

- Circum-Pacific Belt** - 81% of earthquakes
- Alpide Earthquake Belt** - 17% of the largest earthquakes
- Mid-Atlantic Ridge** - Mostly submerged underwater

EARTHQUAKE IN INDIA

- India is **one of the highly earthquake affected countries** due to the presence of technically active mountains - the Himalayas.
- India has been divided into **4 seismic zones** (II, III, IV, and V)





Annual Status of Education Report

असर 2022 RURAL

Facilitated by PRATHAM

The 17th edition of ASER Report highlights the impact of the Covid-19 pandemic on education

ABOUT ASER

- India's annual, largest, citizen-led household survey (conducted since 2005)

AMBIT

- Children from all rural districts

PROVIDES/ASSESSES

- Estimates of enrolment status of children (aged 3-16)
- Basic reading and arithmetic levels of children (aged 5-16)

KEY FINDINGS OF ASER 2022

ASER 2022 covered ~7 lakh children in 19,060 villages across India

- ↑ in enrolment of children in govt schools (from 65.6% to **72.9%**)
- ↑ in enrolment of 6-14 age group (**98.4%**; up from 97.2%)
- ↑ in children taking pvt tuitions (26.4% to **30.5%**)
- ↑ in proportion of girls not enrolled in schools (age 11-14) (from 4.1% to **2%**)
- ↑ in basic reading and arithmetic skills of young children [classes 3 (**20.5%**) and 5 (**42.8%**)]

Note: The improvement/decline in the performance in 2022 is against the year 2018 when the last full pre-pandemic survey was conducted

Note:

NETAJI SUBHASH CHANDRA BOSE

BIRTH

- 23rd January 1897 (celebrated as '**Parakram Diwas**')

Subhas Chandra Bose Aapda Prabandhan Puraskar is announced every year on 23 January to honour the selfless service rendered by individuals/organisations in India in disaster management.



EARLY LIFE

- Cleared the **Indian Civil Services (ICS) examination** (1919) but resigned later
- Considered **Swami Vivekananda** as his spiritual **Guru**
- Newspaper - **Swaraj**

POLITICAL LIFE IN CONGRESS (INC)

- Stood for **unqualified Swaraj** (self-governance)
- Actively participated in **Salt Satyagraha (1930)**
- Opposed Gandhi-Irwin Pact (1931)** & suspension of **Civil Disobedience Movement**
- Won INC Presidential Elections at Haripura (1938) and Tripuri (1939)
- Resigned from INC (1939)** due to ideological differences with Gandhiji
- Founded '**the Forward Bloc**' party to consolidate the **Political Left**

INDIAN NATIONAL ARMY (INA)

- Reached Japan-controlled Singapore in July **1943**, issued from there his famous slogan - '**Delhi Chalo**'

He also gave the slogan - 'Jai Hind'

- Announced the formation of **Azad Hind Government** and INA in Oct 1943
- INA fought allied forces (1944)** in **Imphal** (India) and in **Burma**

INA was first formed under Mohan Singh and Japanese Major Iwaichi Fujiwara. It comprised Indian prisoners of war of the British-Indian Army captured by Japan in Malay and Singapore.

DEATH

- Believably in 1945** when his plane crashed in Taiwan.



Note:



JOSHIMATH LAND SUBSIDENCE

Recent satellite images have shown rapid sinking of Joshimath;
5.4cm in just 12 days (27 Dec'22 to 8 Jan'23)

LAND SUBSIDENCE

- Subsidence is the **sinking of the ground** because of **underground material movement**.
- Causes:** (Man-made + Natural) Removal of water/oil/natural resources, mining activities, earthquakes, soil erosion, soil compaction, sinkhole formation etc.

JOSHIMATH

About

- Located on the **Rishikesh-Badrinath National Highway (NH-7)** (Uttarakhand)
- Falls in seismic **Zone-V**

Strategic Importance

- One of the most important **cantonments** of Indian Army

Possible Causes Of Sinking

- Joshimath **built on ancient landslide material** and not on main rock
- Reactivation of a **geographic fault** (fracture(s) b/w 2 blocks of rock)
- Unplanned construction**
- Obstruction of natural water flow**
- Hydel power activities**

Expert Recommendations

- Complete **shutdown of development and hydropower projects** in the region
- Redevelopment of **drainage planning**
- Relocation** of residents to a safer place
- Re-forestation** to help retain soil capacity
- Better coordination** - govt - civil bodies - Border Roads Organisation

Religious Importance

- Key **transit point for tourists** travelling to Badrinath and Hemkund Sahib
- Home to **1 of the 4 cardinal maths/monasteries** established by **Adi Shankara**

The MC Mishra Committee Report (1976) first warned about Joshimath, pointing to the unplanned development in the already vulnerable area.



Note:

HUMAN-WILDLIFE CONFLICT



When encounters between humans and wildlife lead to negative results, such as loss of property, livelihoods, and even life

Causes of HWC

- Agricultural Expansion
- Urbanization
- Infrastructure Development
- Climate Change
- Wildlife Populations Growth and Range Expansion

Impacts of HWC

- Grave injuries, Loss of life
- Damage to farms and crops
- ↑ violence against animals

WWF India during 2003-2004 developed the Sonitpur Model by which community members were connected with Assam Forest Dept and given training on how to drive elephants away from crop fields and human habitations safely.

In 2020, the SC upheld Madras HC's decision on the Nilgiris elephant corridor, affirming the right of passage of the animals and closure of resorts in the area.

Data on HWC

- Tigers killed 125 humans between 2019 and 2021
- Death of 329 tigers due to poaching, natural and unnatural causes.
- Elephants killed 1,579 humans in three years
- Death of 307 elephants due to poaching, electrocution, poisoning and train accidents

Advisory for HWC Management (Standing Committee of the National Board of Wildlife)

- Gram Panchayats empowered to deal with problematic wild animals (WPA 1972)
- Compensation against crop damage due to HWC (PM Fasal Bima Yojna)
- Local/State depts. to adopt early warning systems and create barriers
- Paying a part of ex-gratia as interim relief within 24 hours of the incident to the victim/family

State – Specific Initiatives

- **UP** - Man-animal conflict under **listed disasters** (in State Disaster Response Fund)
- **Uttarakhand** - **Bio-fencing** carried out by growing various species of plants in areas
- **Odisha** - Casting **seed balls** inside different forests to **enrich food stock for wild elephants**



Note:

GEOSPATIAL TECHNOLOGY

GT facilitates the process of capturing/storing/processing/ displaying/ disseminating information tied to a location (static or dynamic)

TECHNOLOGIES UNDER GT

- **Remote sensing** – Detecting/monitoring the physical characteristics of an area typically from satellite or aircraft
- **Global Positioning System (GPS)** – A satellite navigation system to determine the ground position of an object
- **Geographic Information System (GIS)** – Computer system for capturing, storing and displaying data related to positions on Earth's surface
- **3-D Modelling** – Creating three-dimensional representations of an object or a surface

APPLICATIONS OF GT

- Climate Change and Disaster Management (Ex - Advance Warnings)
- Earth Observation Capabilities (Ex- Vegetation, water quality)
- Healthcare (Ex- Monitoring contact tracing)
- Societal Problems (Ex-Education, livelihood, financial inclusion)
- Logistics (Ex- Tracking goods)
- Real estate (Ex- Analyzing real estate objects remotely)

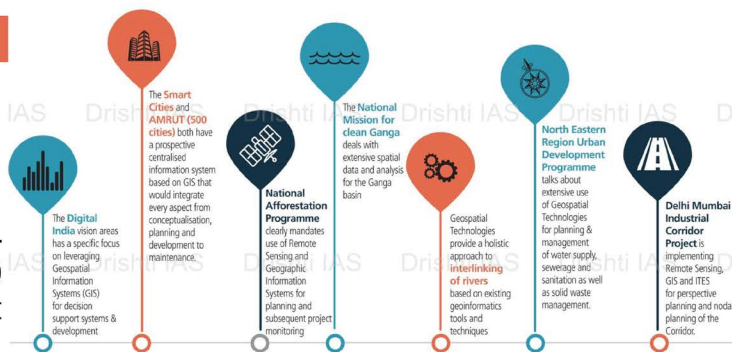
INDIA'S GEOSPATIAL SECTOR

■ GEOSPATIAL ECONOMY

- ◆ Expected to cross ₹63,000 crore by 2025
- ◆ Growth rate of 12.8%

■ National Geospatial Policy 2022

- ◆ **Geospatial Data Promotion and Development Committee** (apex body to be formed)
- ◆ **DST to be the nodal dept.** of GT; GDPDC will recommend DST
- ◆ **Milestones to Achieve:**
 - By 2030 - High resolution topographical survey and mapping
 - By 2035 - National Digital Twin (virtual replica) of major cities/towns



Note:

SWEET REVOLUTION



- An ambitious initiative of the GoI for **promoting apiculture**
- Launched in 2016 under **Khadi and Village Industries Commission (KVIC)** (Ministry of MSME)
- Along its lines, the **Honey Mission** was launched in 2017

BEEKEEPING IN INDIA (APICULTURE)

About Beekeeping

- An agro-based activity undertaken by farmers/ landless labourers in rural areas as a part of **Integrated Farming System (IFS)**

Significance

- Useful in **pollination** of crops
- **Increases income** of the farmers
- **High value beehive products** - honey, beeswax, bee pollen, etc.

World Bee Day

- 20 May

NATIONAL BEEKEEPING AND HONEY MISSION (NBHM)

About

- Central Sector (CS) Scheme
- Announced as a **part of Atmanirbhar Bharat Scheme** (for 2020-21-2022-23)
- Implemented by the **National Bee Board (NBB)** (under MoA&FW)

Objectives

- Development of scientific beekeeping to **achieve the goal of 'Sweet Revolution'**
- Enhance **agri/ horticulture production**
- Set up **Integrated Beekeeping Development Centre (IBDC)**, Api-therapy centres and Bee disease diagnostic labs
- **Empowerment of women** through beekeeping

Note:

NATIONAL GREEN HYDROGEN MISSION

NODAL MINISTRY

- Ministry of New and Renewable Energy

OBJECTIVE

- Decarbonise energy/industrial/mobility sector
- Develop indigenous manufacturing capacities
- Create export opportunities for GH_2 and its derivative

COMPONENTS OF NGHM

- Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)
- Strategic Hydrogen Innovation Partnership (SHIP) (PPP for R&D)

GH_2 is not commercially viable at present; current cost in India is around ₹350-400/kg.
The National Hydrogen Energy Mission aims to bring it down under ₹100/kg.

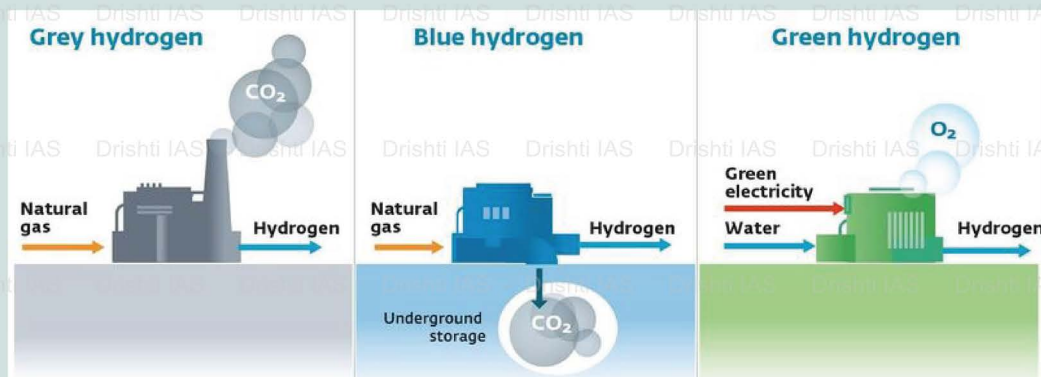
Expected Outcomes by 2030

- ◆ At least 5MMT GH_2 annual production
- ◆ Rs 1 lakh crore fossil fuel import savings
- ◆ 6 lakh jobs
- ◆ 50MMT CO_2 annual emissions averted
- ◆ ₹ 8 lakh crore investment

HYDROGEN AND GREEN HYDROGEN

Hydrogen is the most common element in nature but exists only in combination with other elements. It has to be extracted from naturally occurring compounds (like water).

Green Hydrogen (GH_2) is made by splitting water through an electrical process called electrolysis, using an electrolyser powered by renewable energy (RE).



Note:

SAVITRIBAI PHULE

(03 January 1831 - 10 March 1897)

A 19th century social reformer who worked in the field of women education

EARLY LIFE

- ▶ Born in **Mali community (Maharashtra)**
- ▶ Aged 9 - married to 13 y/o Jyotirao Phule - an **extraordinary couple in India's social & educational history**

SOCIAL ENDEAVOURS

▶ Individual

- Published **Kavya Phule (1854) & Bavan Kashi Subodh Ratnakar (1892)**
- Started **Mahila Seva Mandal (1852)** - raise awareness about women's rights
- Wrote poem - **Go, Get Education** for oppressed communities
- Carried forward the **Satya Shodhak Samaj** after Jyotiba's death (1890)

▶ With Jyotiba

- Started a school for girls, Shudras and Ati-Shudras in Poona (1848) (India's **first school for women - started by Indians**)
- Opened **Native Female School (Pune)** and **The Society for Promoting the Education of Mahars, Mangs and Etceteras in 1850s**
- Started - **Balhatya Pratibandhak Griha** (Home for the **Prevention of Infanticide**) in their own house



Note:

Theaterisation of Armed Forces



What is Theaterisation?

It is a concept that **seeks to integrate the capabilities of the three services** – army, air force and navy – and **optimally utilise their resources** for wars and operations.

There will be **specific theatre commands – or units – could be geographical** – like looking at a border with a particular country – **or thematic**, like a command for all maritime threats.

The **Chief of Defence Staff (CDS)** has been given task of establishment of joint/ theatre commands.

Several nations have theatre commands, **including the US and China**.



What are the Advantages?

- Synergy among all branches of Indian Armed Forces
- Cohesive and Compact Fighting Force
- Utilising the Logistics of all three Services
- Improved Troop Acclimatisation
- Theatre-Specific Resource Optimization
- Speedy Mobilisation and Intel Sharing



What are the Challenges?

- Budgetary Allocations and the Distribution of Finances
- Assets becoming dispersed by multiplication of theatre commands
- Nomenclature and Jurisdiction of Commands
- Leadership of Theatre commands
- Dilution of powers of Armed Services Chiefs

What is the Current Command Structure?

17 single-service commands

- ▶ Army- 7
- ▶ Navy- 7
- ▶ Air Force- 3

Two tri-Service Commands [Strategic Forces Command] and the Andaman and Nicobar Command

Shekatkar Committee Recommendation (2015)

Creation of 3 integrated theatre commands

- ▶ Northern - China border
- ▶ Western - Pakistan border
- ▶ Southern- Maritime Security



Note:

Coral Reefs

(Rainforests of the seas)



About

- ✦ **Large underwater structures** – made of skeletons of **colonial marine invertebrates** ‘coral’ – individually called **polyp**
- ✦ **Symbiotic Relationship with algae** ‘**zooxanthellae**’ (responsible for beautiful colours of corals)
- ✦ Support over 25% of marine biodiversity

Hard Corals vs Soft Corals

- ✦ **Hard Corals** - Rigid skeleton made of **CaCO₃** - reef-building corals
- ✦ **Soft Corals** - Non reef-building

Great Barrier Reef (Australia)

- ✦ Largest Coral Reef in the World
- ✦ World Heritage Site (1981)
- ✦ Endures Mass Coral Bleaching



Corals in India

- ✦ Present in the areas of Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar, Lakshadweep Islands and Malvan



Significance

- ✦ Coral reefs **protect coastlines from storms/erosion**, provide jobs, offer opportunities for recreation
- ✦ Source of **food/medicines**

Threats

- ✦ **Natural:** Temperature, Sediment Deposition, Salinity, pH, etc.
- ✦ **Anthropogenic:** Mining, Bottom Fishing, Tourism, pollution, etc.

Coral Bleaching

- ✦ Corals under stress - expel algae – thus turning white (bleached)
- ✦ Bleached corals - not dead – but, more risk of starvation/disease



Initiatives to Protect Corals

Technology

- ✦ **Cyromesh:** Storage of the coral larvae at (-196°C) - Can be later reintroduced to the wild
- ✦ **Biorock:** Creating artificial reefs on which coral can grow rapidly



Global

- ✦ International Coral Reef Initiative
- ✦ The Global Coral Reef R&D Accelerator Platform

Indian

National Coastal Mission Programme

Note:

QUANTITATIVE INSTRUMENTS OF MONETARY POLICY



LIQUIDITY ADJUSTMENT FACILITY (LAF)

- Repo Rate (RR): The rate at which the RBI lends money to commercial banks. Here, RBI purchases securities.
- Reverse Repo Rate: The rate at which the RBI borrows money from commercial banks within the country. Opposite of Repo.
- If RBI wants to signal tight monetary policy, it will increase the repo rate; banks will increase their lending rates.



BANK RATE

- It is a long-term rate (RR is short-term) at which the central bank lends money to other banks.
- Increase in Bank rate will increase the interest rates on the Loans / Deposits and vice versa.



STATUTORY LIQUIDITY RATIO (SLR)

- SLR is the minimum percentage of deposits that a commercial bank has to maintain in the form of liquid cash, gold or other securities.
- If RBI wants to tighten the monetary policy, it will raise the SLR.



CASH RESERVE RATIO (CRR)

- Banks are required to hold a certain proportion of their deposits in the form of cash with RBI.
- With the increase in CRR, banks increase the lending rates.



OPEN MARKET OPERATIONS (OMOS)

- These include purchase/sale of government securities by the Central Bank for injection/absorption of durable liquidity in the banking system.



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Note:

Pt. MADAN MOHAN MALAVIYA

25th December 1861- 2nd November, 1946

Educationist, Journalist, Politician and Freedom Activist

Title of 'Mahamana' by Mahatma Gandhi and 'Karmayogi' by Dr. S. Radhakrishnan



ROLE IN FREEDOM STRUGGLE

- He was midway between the Moderates and the Extremists
- Took part in Salt Satyagraha and the Civil Disobedience Movement (1930)
- Elected President of the Indian National Congress for four sessions (1909, 1913, 1919, and 1932)

MAJOR CONTRIBUTIONS

- Ending the Indian Indenture system (bonded labour)
- Setting up the Ganga Mahasabha in 1905
- Member of the Imperial Legislative Council for 11 years
- Popularised the term 'Satyamev Jayate'
- Introduction of Devnagri in British-Indian Courts
- Helped establish the Hindu Mahasabha in 1915
- Founded the Banaras Hindu University (BHU) in 1916

JOURNALISM

- Abhyudaya (Hindi weekly) and Maryada (Hindi monthly)
- Chairman of the Board of Directors of the Hindustan Times

HONOURS

- Bharat Ratna (2014)
- Varanasi-New Delhi Mahamana Express (2016)



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Note:

SAHITYA AKADEMI AWARDS

The 2nd highest literary honour by the Govt of India, after the Jnanpith Award Estd. - 1954

CONFERRED BY

- Sahitya Akademi - India's National Academy of letters

AWARDS

- 24 awards for literary works in recognised languages (22 from 8th Schedule + English and Rajasthani)
- 24 awards for literary translations from and into the languages of India.

CRITERIA FOR AWARDS

- Author must be of Indian Nationality
- Book/work must be an outstanding contribution to the corresponding language/literature



SAHITYA AKADEMI AWARDS 2022

BHASHA SAMMAN

- Given for considerable contribution to the propagation, modernization or enrichment of the languages concerned
- Awarded to **Udaya Nath Jha** (valuable contribution in classical and mediaeval literature in the eastern region)

BOOKS SELECTED FOR TRANSLATION

- Yaad Vashem (N. Nallathambil), Akupacha Kavithalu (Varala Anand) +15 more

IMP AWARDEES

- Anuradha Roy
- Badri Narayan
- Mr. Rajendran
- Praveen Bandekar
- Anis Ashfaq
- Manoj Kumar Goswami

WORK

- All the Lives We Never Lived (Eng novel)
- Tumadi Ke Shabd (Hindi poetry book)
- Kala Pani (Tamil Novel)
- Ujavya Sondechya Bahulya (Marathi Novel)
- Khwab Sarab (Urdu novel)
- Bhool Satya (Assamese)



Anuradha Roy



Badri Narayan

OTHER SAHITYA AKADEMI AWARDS

- Sahitya Akademi Bal Sahitya Puraskar:** Based on author's total contribution to children literature.
 - 2022 Award - Ganesh Marandi for Hapan Mai (book in Santhali)
- Sahitya Akademi Yuva Puraskar:** Books published by an author of age of 35 and below.
 - 2022 Award - Pawan Nalat for Mi Sandarbha Pokharatoy (Marathi Poetry)



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Note:

Samudrayaan Mission

India's **First Manned Ocean Mission** – Launched in Chennai (2021)

Objective

- Send 3 persons in a **self-propelled, manned submersible vehicle - MATSYA 6000** (indigenously developed) to a depth of 6000 m
- **Deep-ocean exploration and mining of rare minerals**

Significance for India

- **First developing country** to carry out a deep ocean mission
- **Joined the elite club of nations** (US, Russia, France, Japan and China) to have niche technology and vehicles to carry out subsea activities
- Promotion of **ocean literacy**; **Underwater engineering innovations**

Nodal Ministry

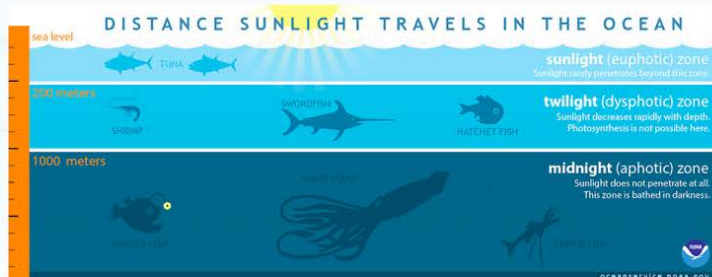
Ministry of Earth Sciences

Nodal Mission

Deep Ocean Mission (June 2021) - To Support Blue Economy Initiatives

2021-2030

Decade of Ocean Science for Sustainable Development (declared by UN)



Deep Ocean

Generally defined as the depth at which light begins to dwindle, typically around 200 meters

India's Oceanic Facts

- **Coastline:** ~7,516km
- **Coastal States:** 9 of 28
- **Total Islands:** 1,382
- **Ports:** 200+ (including 13 major ports)
- **Exclusive Economic Zone:** 2 million+ km²
- **Cargo handled by Ports:** ~1,400 million tons (yearly)
- **Coastal Economy:** 4 million+ fisherfolk & coastal communities

CBD COP15

The UN Convention on Biological Diversity (CBD) 1993 - a legally binding treaty to conserve biodiversity

CBD Conference of Parties is the Governing body of the Convention



MEETINGS OF THE CONFERENCE OF THE PARTIES

COP 1 (1994)

- Nassau, Bahamas
- Proposed 29 December as International Day for Biological Diversity

EXCOP 1

- 1st extraordinary meeting of UN CBD COP
- At Cartagena, Colombia (Feb 1999) & Montreal, Canada (Jan 2000)
- Adoption of Cartagena Protocol on Biosafety

COP 6 (2002)

- The Hague, Netherlands
- Global Taxonomy Initiative, Global Strategy for Plant Conservation adopted

COP 5 (2000)

- Nairobi, Kenya
- UNGA adopted 22 May as International Day for Biological Diversity

COP 10 (2010)

- Nagoya, Japan
- Nagoya Protocol (Access to Genetic Resources and Fair & Equitable Sharing of Benefits) adopted
- Strategic Plan for Biodiversity 2011-20 and Aichi Biodiversity Targets
- GBO 3

COP 8 (2006)

- Curitiba, Brazil
- Global Biodiversity Outlook (GBO) Report 2 (GBO 1 in 2001)

COP 11 (2012)

- Hyderabad, India

COP 14

- Sharm El-Sheikh, Egypt

PHASE-I

- Theme - Ecological Civilization: Building a Shared Future for All Life on Earth
- Held in Kunming, China (October 2021)
- Kunming Biodiversity Fund

COP 15

PHASE-II

- Held in Montreal, Canada
- Adopted Post 2020 Global Biodiversity Framework - 4 goals & 23 targets to be achieved by 2030.
- 30 by 30 Target - restore 30% degraded ecosystems and protect at least 30% of the world's lands, oceans and coastal areas by 2030
- No single country met all 20 Aichi targets (expired in 2020) within its own borders



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Note:

FIFA WORLD CUP

*The most prestigious
Football tournament in the world;
takes place quadrennially*



About FIFA:

Fédération internationale de Football Association

Highest governing body of football in the world

Founded in 1904

HQ - Zurich (Switzerland)

All-India Football Federation (AIFF) - Manages game of association football in India



FIFA World Cup:

First - Held in Uruguay in 1930; Won by Uruguay

Trophy - Jules Rimet Trophy (1930-70); FIFA WC Trophy (1970 - present)

Jules Rimet - Frenchman who proposed Football tournament



FIFA World Cup 2022

Held in Qatar - First Arab Nation to host FIFA WC

Winner: **Argentina** won (defeated France) for the 3rd time (previously in 1978 & 1986)



Official Ball

Al Rihla (the journey) A reference to Ibn Battuta's travelogue

Al Hilal (the dream) Official ball for semi-finals and final



At the time of First FIFA World Cup (1930), there was no official football; the finalists brought their own balls - T Model ball (Uruguay) and Tiento (Argentina)



Semi-Automated
Offside Technology (SAOT)
and connected balls technology
are being used for the
first time in FIFA WC

FIFA WORLD CUP Qatar 2022



Official Mascot

La'eeb (Arabic for 'super-skilled player')



Awards

Golden Boot (Most number of goals) - Kylian Mbappe (France)

Golden Glove - Emiliano Martinez (Argentina)

Golden Ball (Performer of the Tournament) - Lionel Messi (Argentina)

Young Player - Enzo Fernandez (Argentina)

FIFA Fair Play Award - England



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Note:

MINIMUM SUPPORT PRICE (MSP)

The rate at which the govt. purchases crops from farmers; based on a calculation of at least 1.5x the cost of production incurred by the farmers

RECOMMENDED BY

Commission for Agricultural Costs & Prices (CACP) (recommends MSPs for 22 mandated crops and Fair and Remunerative Price for Sugarcane)

22 MANDATED CROPS

(14 Kharif, 6 Rabi and 2 Other Commercial crops)

- 7 CEREALS** Paddy, Wheat, Barley, Jowar, Bajra, Maize And Ragi
- 5 PULSES** Gram, Arhar/tur, Moong, Urad And Lentil
- 7 OILSEEDS** Groundnut, Rapeseed/mustard, Soyabean, Sunflower, Sesamum, Safflower And Niger Seed

RAW COTTON

RAW JUTE

COPRA

MSP is the price at which the govt. is supposed to procure the mandated crops from farmers if the market price falls below it

FACTORS FOR RECOMMENDING MSP

- ▶ Cost of cultivation
- ▶ Demand-Supply situation for the crop
- ▶ Market price trends
- ▶ Inter-crop price parity
- ▶ Implications for consumers (inflation)
- ▶ Environment (soil and water use)
- ▶ Terms of trade b/w agri and non-agri sectors (ratio of farm inputs and outputs)

Considers both A2+FL and C2 costs

Actual expenses on seeds, fertilisers, irrigation and the like

Unpaid family labour

A2 + FL

C2

Rentals or interest foregone on owned land and fixed capital assets

MSP has no statutory backing — a farmer cannot demand MSP as a matter of right



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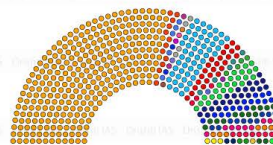
Note:



Types of Majority in Parliament (II)

Special Majority

- Majority of the total membership (irrespective of vacancies/absentees) of each House and a majority of 2/3rd of the members of each House present and voting



Const. Provisions – Amended by Special Majority

- Fundamental Rights
- Directive Principles of State Policy
- All other provisions not covered under Simple Majority or under Special Majority + Consent of States

For the removal of Vice President and the Speaker/Deputy Speaker of Lok Sabha, effective majority is required (more than 50% of the total strength minus vacancies)



Special Majority + Consent of States

- Const. provisions related to the **federal structure of the polity** - amended by a special majority + the consent of 50% of the state legislatures by a simple majority

Const. Provisions – Amended by Special Majority + Consent of States

- President** - election and its manner
- Union and States** - Distribution of legislative powers and Extent of the executive power
- Supreme Court and High Courts**
- GST Council**
- All 3 lists in 7th Schedule
- Parliament** - Representation of states, Power to amend the Constitution and its procedure (Article 368 itself)



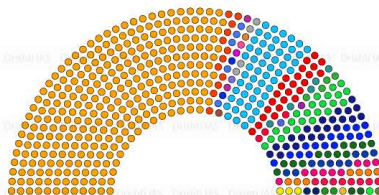
Note:



Types of Majority in Parliament

The Constitution of India can be amended either by

- (a) Simple Majority,
- (b) Special Majority or
- (c) Special Majority of Parliament + Consent of States



Simple Majority

- A majority of the members (**more than 50%**) of the House present and voting

Const. Provisions- Amended by Simple Majority

- **New States-** Formation/admission/establishment, alteration of areas, boundaries or names of existing states, Union territories
- **Citizenship-** Acquisition and termination
- **Parliament-** Quorum, Rules of procedure, Parliamentary Privileges/Committees, Use of English language
- **State Legislative Councils-** Abolition/creation
- **Bills-** Ordinary/Financial
- **Salaries and Allowances-** President, Governors, Speakers, Judges, MPs etc.
- **SC-** Conferment of more jurisdiction, Number of puisne judges
- **Elections-** Parliament & state legislatures, Delimitation of constituencies
- **Schedule-** **5th** (scheduled areas and STs) and **6th** (tribal areas)



Note:

Election Commission of India (ECI)

About

- **Autonomous Constitutional Authority** - Administers Union/state election
 - LS, RS, State LA, the offices of the President and VP
- Estd - **25th Jan 1950** (National Voters' Day)



Constitutional Provisions

Part XV - Article 324 to 329

Structure

- 1 Chief Election Commissioner and 2 Election Commissioners **appointed by President**
- **Tenure- 6 years, or up to the age of 65 years**, whichever is earlier
- Retiring ECs – **eligible for further appointment by the govt.**
- **Removal of CEC-** Resolution on the **ground of proven misbehaviour or incapacity**, with majority of 2/3rd members present and voting, supported by more than 50% of the total strength of the house



Major Roles and Responsibilities



- Determining Electoral Constituencies
- Preparing/Revising electoral rolls
- Notifying the schedules and dates of elections
- **Registering political parties and granting them the status of national or state parties**
- Issuing the Model Code of Conduct (MCC) for political parties
- Advising the President on **matters concerning the disqualification of MPs**

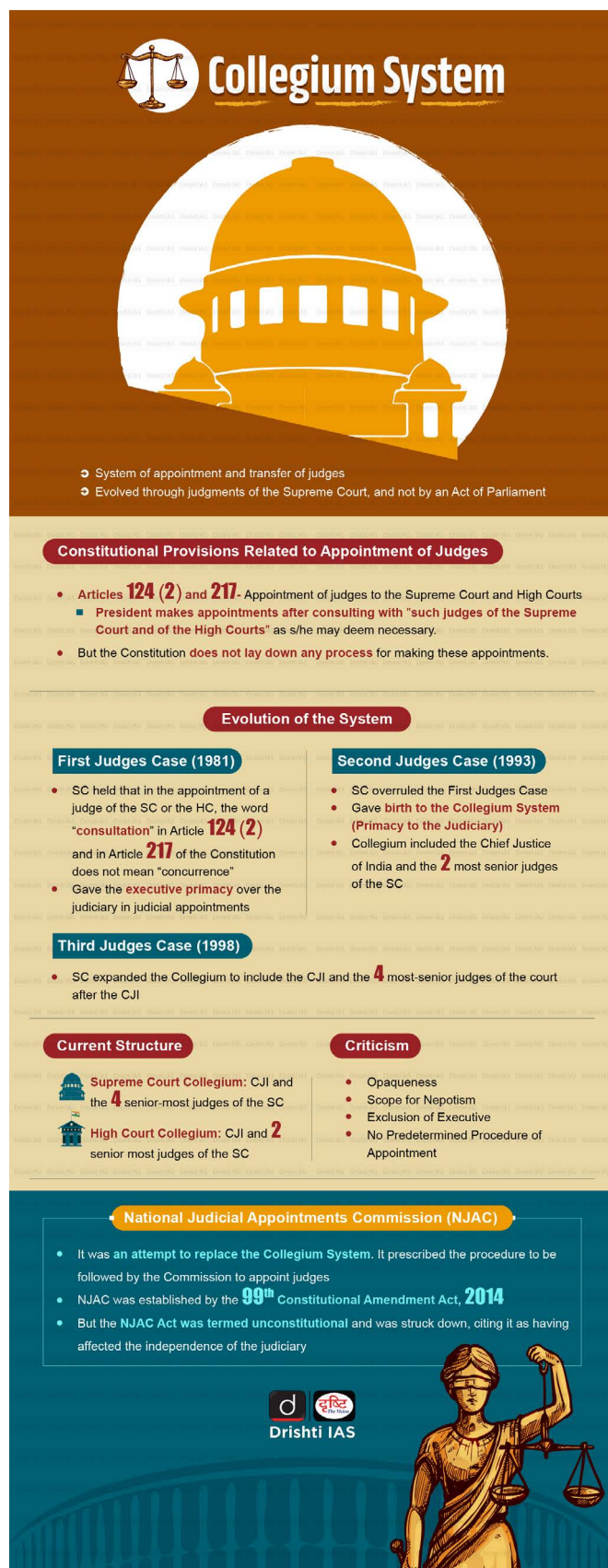
Challenges

- Truncated Tenure of CEC
- Executive Influence in Appointments
- Dependence on Centre for Finance
- Lack of Independent Staff



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Note:



Collegium System

- System of appointment and transfer of judges
- Evolved through judgments of the Supreme Court, and not by an Act of Parliament

Constitutional Provisions Related to Appointment of Judges

- Articles **124 (2)** and **217**- Appointment of judges to the Supreme Court and High Courts
 - President makes appointments after consulting with "such judges of the Supreme Court and of the High Courts" as s/he may deem necessary.
- But the Constitution does not lay down any process for making these appointments.

Evolution of the System

First Judges Case (1981)

- SC held that in the appointment of a judge of the SC or the HC, the word "consultation" in Article **124 (2)** and in Article **217** of the Constitution does not mean "concurrence"
- Gave the **executive primacy** over the judiciary in judicial appointments

Second Judges Case (1993)

- SC overruled the First Judges Case
- Gave birth to the **Collegium System** (Primacy to the Judiciary)
- Collegium included the Chief Justice of India and the **2** most senior judges of the SC

Third Judges Case (1998)

- SC expanded the Collegium to include the CJI and the **4** most-senior judges of the court after the CJI

Current Structure


- Supreme Court Collegium:** CJI and the **4** senior-most judges of the SC
- High Court Collegium:** CJI and **2** senior most judges of the SC


Criticism

- Opaqueness
- Scope for Nepotism
- Exclusion of Executive
- No Predetermined Procedure of Appointment

National Judicial Appointments Commission (NJAC)

- It was an attempt to replace the Collegium System. It prescribed the procedure to be followed by the Commission to appoint judges
- NJAC was established by the **99th** Constitutional Amendment Act, **2014**
- But the NJAC Act was termed unconstitutional and was struck down, citing it as having affected the independence of the judiciary

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Note:

TECTONIC PLATES

OR LITHOSPHERIC PLATES

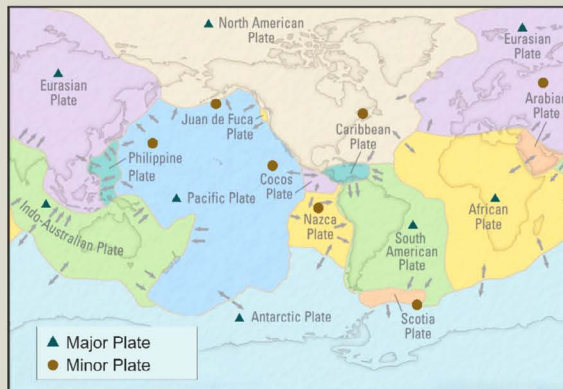
ABOUT

- Massive, irregularly-shaped slabs of solid rock (Crust + Top Mantle)
- In 1967, McKenzie, Parker and Morgan came out with the concept of Plate Tectonics

TYPE

- Continental or Oceanic (whichever occupies the larger portion of plate)
- Pacific plate - Oceanic; Eurasian plate - Continental

MAJOR AND MINOR PLATES



THE INDIAN PLATE

- Includes - Peninsular India and the Australian continental portions
- East Extension - Rakim Yoma Mountains (Myanmar) to Java Trench
- West - Makrana coast of Balochistan (Pakistan)
- Rate of Movement - 54 mm/year in northeast direction
- Boundary b/w India and Antarctic plate - Marked by an oceanic ridge (divergent boundary)
- Formation of Himalayas - Collision of Indian and Eurasian plates

PLATE MOVEMENT

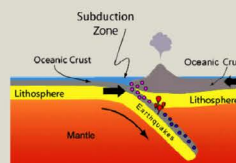
- Plates constantly move horizontally over the Asthenosphere
- Collision/drifting away of plates result in earthquakes/volcanic eruptions

Asthenosphere - a zone of Earth's mantle lying just beneath Lithosphere; believed to be much hotter and more fluid than Lithosphere

SUBDUCTION

Occurs when tectonic plates shift and one is pushed under another

Downgoing ocean plate → Pushed into hotter Mantle plate → Heats up → Mixes volatile elements → Produces magma → Volcanic eruption



BOUNDARIES OF PLATES

- Convergent/Destructive**, where plates move into one another (subduction zones)
- Divergent/Constructive**, where plates move apart (rift valleys)
- Transform/Conservative**, where plates move sideways in relation to each other (creates faults)

Vice-President of India

Occupies the second highest office in the country after President



Origin

Modelled on the lines of the American Vice-President

Const. Provisions

Article 63-71

Election

Indirectly elected by an electoral college

This electoral college consists of the elected members of LS and RS + nominated members of RS but not the members of State LAs (unlike electoral college for Presidential election)



The power of conducting elections to the office of VP rests with the ECI (Article 324)

Qualification

Citizen of India - at least 35 years of age

First VP and Current VP

Dr. S. Radhakrishnan
Jagdeep Dhankhar

Term of Office

5 years; eligible for re-election

Removal from Office

- VP may resign
- Removal by a effective majority of RS (all the then members) and LS agreeing to it (simple majority)
 - Resolution for removal is introduced only in RS
- Constitution mentions no ground for removal

Powers

- Ex-officio Chairman of RS - Powers and functions similar to the LS Speaker
- Acts as President (max 6 months) - when a vacancy occurs in his office

This is different from the office of American VP who succeeds to the Presidency when the office falls vacant

When acting as the President, VP does not perform the functions of the Chairman of RS



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Note:



Dr. Bhimrao Ramji Ambedkar



Babasaheb Ambedkar-
The Father of Indian Constitution
14 April 1891- 06 December 1956

1 Brief Profile

- A social reformer, jurist, economist, author and thinker of comparative religions
- Labour member in the **Executive Council of Viceroy (1942)**
- **Chairman** of the **Drafting Committee** for the new Constitution
- **First Law Minister** of India
- Posthumously awarded **Bharat Ratna (1990)**

2 Contributions

- Led the **Mahad Satyagraha in 1927** against Hindus
- Participated in **all three Round Table Conferences**
- Signed the **1932 Poona pact with Mahatma Gandhi** to abandon the idea of separate electorates for the depressed classes

The reserved seats for depressed classes were increased from 71 to 147 in provincial legislatures and to 18% in the Central Legislature.

- **Opposed the special status of J&K (Article 370)**
- Supported **Uniform Civil Code**
- Referred **Article 32** as "soul of the Constitution and very heart of it"

3 Resignation and Buddhism

- Differences over **Hindu Code Bill** led to his resignation from Cabinet in **1951**
- Converted to Buddhism; his death is observed as **Mahaparinirvan Diwas**

4 Important Journals

- Mooknayak (**1920**)
- Samatha (**1929**)
- Bahishkrit Bharat (**1927**)
- Janata (**1930**)

5 Books

- Annihilation of Caste
- Buddha or Karl Marx
- **The Untouchable**: Who are They and Why They Have Become Untouchables
- The Rise and Fall of Hindu Women

6 Organisations

- Estd. '**Bahishkrit Hitkarini Sabha**' (**1923**)
- Founded **Independent Labour Party (1936)**
- Founded **Scheduled Castes Federation (1942)**



Note:

Pacific Ring of Fire

aka the Circum-Pacific Belt

CHARACTERISTICS

- Path along Pacific Ocean characterised by **active volcanoes** and frequent **earthquake**
- Majority of Earth's volcanic eruptions (**75%**)/earthquakes (**90%**) occur here

The next most seismically active region (5-6% of earthquakes) is the Alpide belt (Mediterranean region - eastward through Turkey, Iran, and northern India)

CAUSE OF FORMATION

- **Plate Tectonics**- Pacific Plate interacts with less-dense plates

GEOGRAPHICAL STRETCH

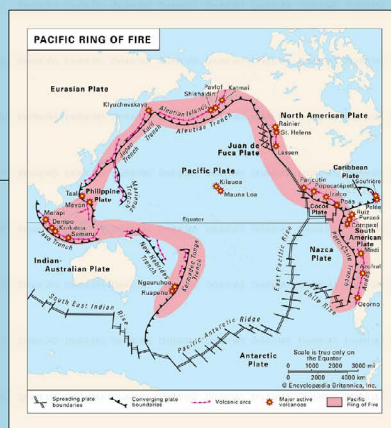
- **~40,000 Kms**; Western coast of **S & N America** to Eastern coast of **Asia** past **New Zealand** to Northern Coast of **Antarctica**

IMPORTANT COUNTRIES IN RoF

- Chile, Ecuador, Peru, Mexico, US, Canada, Russia, Japan, Philippines, Australia, Indonesia, New Zealand, and Antarctica

ACTIVE VOLCANOES IN RoF

- **Mauna Loa (Hawai)**- world's largest active volcano
- **Mount Tambora (Indonesia)**- largest volcanic eruption (**1815**)
- **Mount Fuji**- Japan's tallest



Most of the active volcanoes on the RoF are found on its western edge, from Russia to New Zealand



MAJOR EARTHQUAKES IN RoF

- **Valdivia Earthquake of Chile 1960**- strongest recorded earthquake
- **Northern Sumatra Earthquake 2004**- occurred in Indian Ocean



Note:

Wassenaar Arrangement

For exchange of information on transfers of conventional weapons and dual-use goods and technologies

About

- **Voluntary** export control regime **formally estd. in 1996**
- Succeeded the Cold War-era **Coordinating Committee for Multilateral Export Controls**

Objective

- Controlling the movement of technology material or components to countries or entities which **undermine international security and stability**

Members

- **42** members (mostly NATO and EU states)



- The **P5** (except China) of UNSC are members



India's Membership of WA

- India joined as a **member in 2017** (latest entrant)
- India's membership implies that it is **recognised to have dual use technology**
- Being a non-signatory to the NPT, the WA membership is significant for India to **boost its credentials to enter the Nuclear Suppliers Group (NSG)**

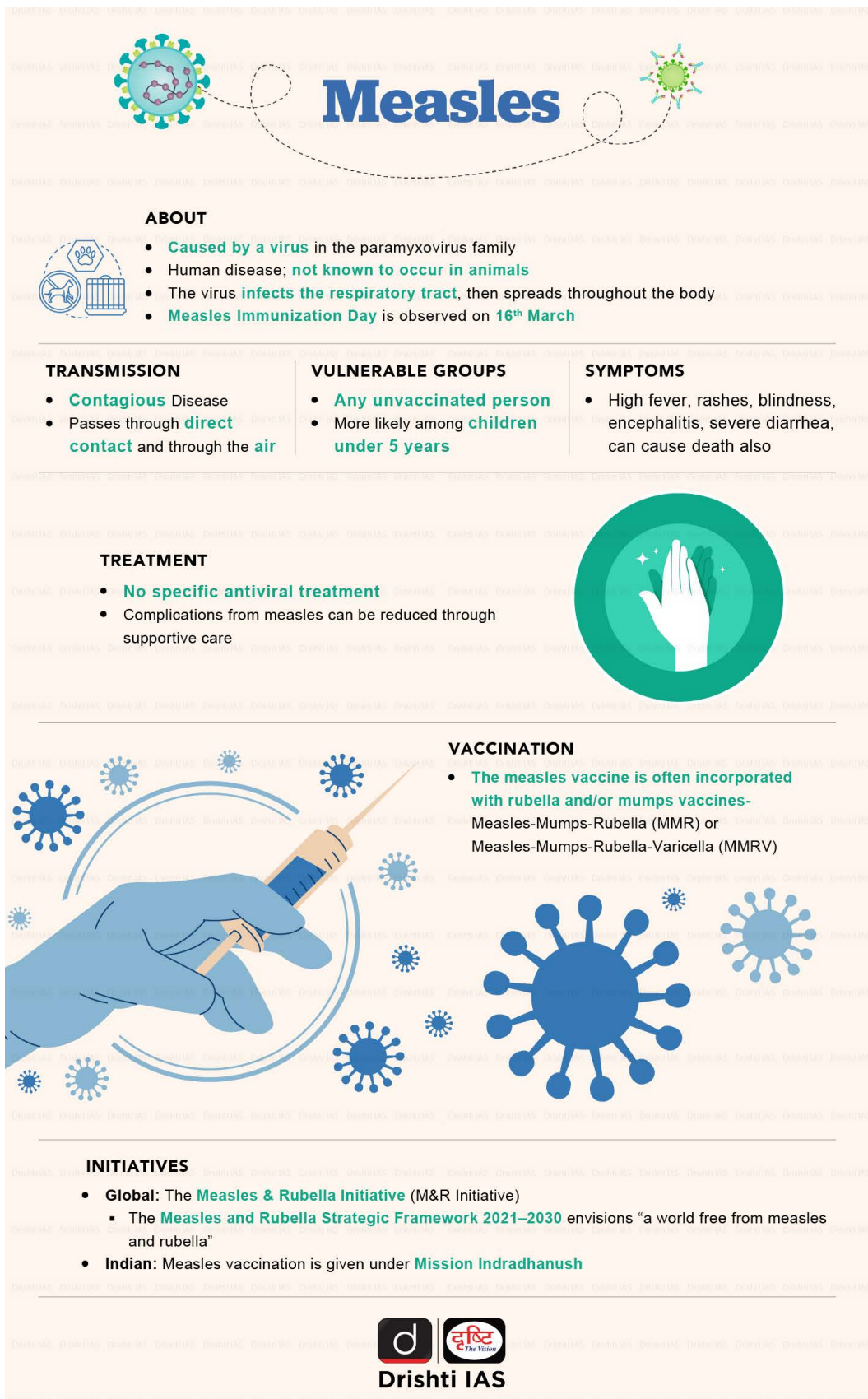
Secretariat

- **Vienna, Austria**

WA Plenary

- Decision-making body with **representatives from all participating states**
- Plenary **chair rotates annually**; India's chairmanship begins from **1st Jan, 2023**





Measles

ABOUT

- Caused by a virus in the paramyxovirus family
- Human disease; **not known to occur in animals**
- The virus **infects the respiratory tract**, then spreads throughout the body
- Measles Immunization Day** is observed on **16th March**

TRANSMISSION

- Contagious** Disease
- Passes through **direct contact** and through the **air**

VULNERABLE GROUPS

- Any unvaccinated person**
- More likely among **children under 5 years**

SYMPTOMS

- High fever, rashes, blindness, encephalitis, severe diarrhea, can cause death also

TREATMENT

- No specific antiviral treatment**
- Complications from measles can be reduced through supportive care

VACCINATION

- The **measles vaccine** is often incorporated with **rubella and/or mumps vaccines**- Measles-Mumps-Rubella (MMR) or Measles-Mumps-Rubella-Varicella (MMRV)

INITIATIVES

- Global:** The **Measles & Rubella Initiative** (M&R Initiative)
 - The **Measles and Rubella Strategic Framework 2021–2030** envisions “a world free from measles and rubella”
- Indian:** Measles vaccination is given under **Mission Indradhanush**

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Note:

COST OF LIVING REPORT 2022

NY, Singapore world's most expensive cities

New York and Singapore have emerged as the joint-most expensive cities to live in, according to the annual Worldwide Cost of Living report prepared by the Economist Intelligence Unit.

Asian cities tended to escape the steep price rises seen elsewhere, with the average increase in the cost of living at 4.5%, although individual country performance varied due to government policies and currency moves.

In INDIA

- Bengaluru - #161
- Chennai - #164
- Ahmedabad - #165

The cheapest cities in the rankings are **Damascus, Tripoli and Tehran**, reflecting these countries' weak economies and currencies.



- | | | |
|----|---------------|-----------|
| 1 | New York | Singapore |
| | United States | |
| 3 | Tel Aviv | |
| | Israel | |
| 4 | Los Angeles | Hong Kong |
| | United States | |
| 6 | Zurich | |
| | Switzerland | |
| 7 | Geneva | |
| | Switzerland | |
| 8 | San Francisco | |
| | United States | |
| 9 | Paris | |
| | France | |
| 10 | Copenhagen | Sydney |
| | Denmark | Australia |

Soaring Prices

8.1%

Rise in prices noted over the past year in the world's biggest

cities, reflecting a global cost-of-living crisis sparked by the war in Ukraine and continuing covid-19 restrictions in China.

Petrol Costs

The most rapid increases in the index was caused by the price of a litre of petrol, which has risen by 22% in the last year amid higher global oil prices and a stronger US dollar

About the report

Worldwide Cost of Living report is a survey which was carried out in August and September this year. It compares more than 400 individual prices across over 200 products and services in 172 cities globally.



Note:

UN Security Council (UNSC)

The UN Charter vests the primary responsibility for maintaining international peace and security to the UNSC

About

One of the **6 principal organs** of UN; established in **1945** by UN Charter

Headquarters

New York City

First Session

17 January 1946 at Church House, Westminster, London

Membership

- 15 members - 5 Permanent Members (P5), 10 Non-Permanent Members elected for two-year terms (5 elected each year)
- P5 - the US, the UK, Russia, France and China

Presidency

- Rotates every month among the 15 members
- India's Presidency for year 2022 - December

Voting Powers

- 1 member = 1 vote
- P5 have **veto power**
- Members of UN sans membership of UNSC participate without vote

UNSC Committees/Resolutions

Terrorism

- Resolution 1373** (Counter Terrorism Committee)
- Resolution 1267** (Da'esh and Al Qaeda Committee)

Non-Proliferation Committee

- Resolution 1540** (against nuclear, chemical and biological weapons)

India and UNSC

- Served **7 times** as non-permanent member; elected for the **8th time** for 2021-22; **advocates for a permanent seat**
- Arguments for a permanent seat:
 - 43 peacekeeping missions**
 - Active participation in **formulating Human Rights Declaration (UDHR)**
 - India's **population, territorial size, GDP, economic potential, cultural diversity, political system** etc.



G4

Group of 4 countries (Brazil, Germany, India and Japan) which advocate each other's bids for permanent seats in the UNSC

Uniting for Consensus (UfC) Movement

- Informally known as the **Coffee Club**
- Countries **oppose the expansion Permanent Seats** of UNSC
- Prime movers of the club** - Italy, Spain, Australia, Canada, South Korea, Argentina and Pakistan
- Italy and Spain are opposed to Germany's bid; Pakistan - India's bid; Argentina - Brazil's bid and Australia - Japan's bid

Major Challenges in UNSC

- Usual UN rules don't apply to UNSC deliberations; **no records of meetings kept**
- Powerplay in UNSC; **anachronistic veto powers** of P5
- Deep polarisation** among P5; frequent divisions end up blocking key decisions
- Inadequate representation** of many regions among of the world

G-20 (The Group of Twenty)

About

- In 1999, following the **Asian Financial Crisis** of the **1990s**, **G20** was established as a Forum for **Finance Ministers and Central Bank Governors**.
- Raised to the **Summit level in 2008** to address the global financial and economic crisis of 2008.

Aims

- Secure global financial stability by involving world's largest advanced and emerging economies.

Structure and Functioning of G20

- The **G20 Presidency** rotates annually
- No permanent **Secretariat** or **Headquarters**
- 19 countries** are divided into **5 groups**
- The presidency rotates between each group

Troika

- It is a working association between the **current presidency**, **past presidency** and **next presidency**.

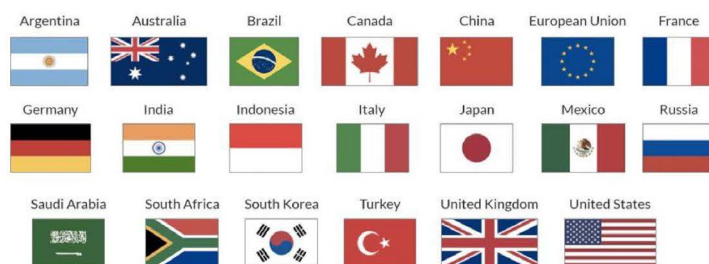
Challenges

- No Enforcement mechanism
- No legal binding
- Polarization of Interests:
 - Russia Ukraine Conflict
 - China's strategic rise
 - NATO's expansion

G20 India 2023

- India assumed the **18th G20 Presidency** from **December 1, 2022** for a **one-year period**.
- Theme:**
 - "Vasudhaiva Kutumbakam"** a Sanskrit word which Stands for **"One Earth · One Family. One Future"**.
 - This is taken from the ancient Sanskrit text of the **'Maha Upanishad'**.

G20 COUNTRIES



Finance Commission

The Finance Commission is the balancing wheel of fiscal federalism in India

~ Indian Constitution

Article 280

(Indian Constitution Part XII)

Constitution of FC as a Quasi Judicial Body

Constituted by

President of India
quinquennially (or earlier)

Members

- Chairman + 4 members (including an HC judge) – appointed by President
- Authority to decide qualifications – Parliament
- Tenure – as specified by the President
- Reappointment – Eligible

Makes Recommendations to President about

- Distribution of net tax proceeds between Centre and States
- Principles for grants-in-aid to the states by the Centre
- Evaluates the rise in the Consolidated Fund of a state to affix the resources of Panchayats/Municipalities
- Other financial matters referred to it by President

*Recommendations of the FC are **only advisory and not binding** on the Government

Powers of a Civil Court

As per Code of Civil Procedure 1908

First FC
(1952–57)

Chairman - KC Neogy

Second FC
(1957–62)

Chairman - K Santhanam

Current/Fifteenth FC
(2021–2026)

Chairman - NK Singh

State Finance Commission

- Constituted by Governor every 5th year (Article 243)
- Reviews the financial position of Panchayats and Municipalities



Note:

Millet

About

- Small-grained cereals also known as **coarse grains**
- Often referred to as **'Superfood'**
- Among the **first crops to be domesticated** - evidence of millet consumption dates back to the **Indus Valley Civilisation (3,000 BC)**

Climatic Conditions

- Mainly a **Kharif crop in India**
- Temperature:** 27°C - 32°C
- Rainfall:** Around 50-100 cm
- Soil Type:** Inferior alluvial or loamy soil

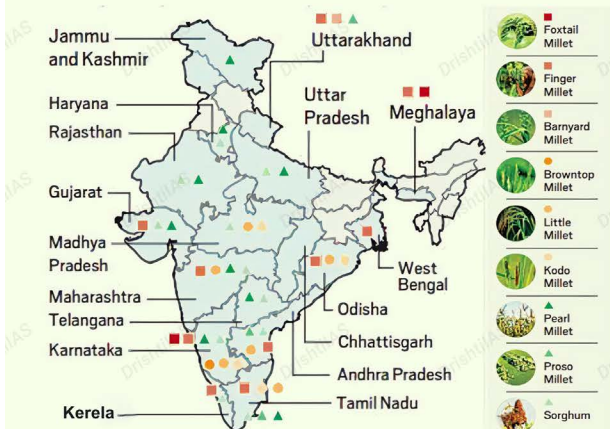


India and Millets

- Global Largest Millet Producer:**
 - 20% of global production, 80% of Asia's production
- Common Millets:**
 - Ragi** (Finger millet), **Jowar** (Sorghum), **Sama** (Little millet), **Bajra** (Pearl millet), and **Variga** (Proso millet)
 - Indigenous varieties** (small millets) - **Kodo, Kutki, Chenna and Sanwa**
- Top Millets Producing States:**
 - Rajasthan (largest), Karnataka, Maharashtra, Madhya Pradesh and Uttar Pradesh
- Govt. Initiatives:**
 - Initiative for Nutritional Security through Intensive Millet Promotion (INSIMP)
 - 'India's Wealth, Millets for Health'**
 - Millet Startup Innovation Challenge
 - Hiked MSP** for Millets
 - Agriculture Ministry declared millets as **"Nutri Cereals"** in 2018

Significance

- Less expensive, **nutritionally superior**
- High protein, fibre, minerals, iron, calcium and a **low glycemic index**
- Help **tackle lifestyle problems and health** (obesity, diabetes etc.)
- Photo-insensitive, **resilient to climate change & water efficient**



International Year of Millets - Year 2023

Proposed by India, declared by UNGA





CLIMATE CHANGE

PERFORMANCE INDEX 2023

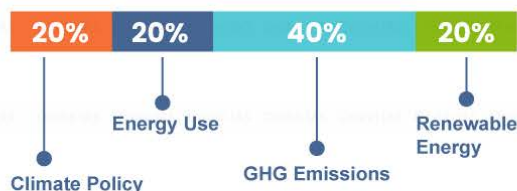
Independently tracks the climate protection performance of **59 countries** and the EU

Published Jointly by

Germanwatch, New Climate Institute and Climate Action Network since 2005



4 Criteria



CCPI 2023

- First three positions **remained empty**
- Top 5 Performers (rank 4 to 8) - **Denmark, Sweden, Chile, Morocco and India**
- Poor Performers - **China (51)**, the **US (52)** and **Iran (63 - lowest)**
- India is the **only G20 country in the top 10 rank**

INDIA

#8

ranked best amongst all large economies

India was ranked 10th in CCPI 2022



Note:

El Niño and La Niña

El Niño

- Warming of the ocean surface/ Above average sea surface temp. (SST)
- Easterly winds either weaken or start blowing in the opposite direction
- First noticed by Peruvian fishermen in the 1600s
- More frequent than La Niña

Impacts

- Drastically higher rainfall in S. America (coastal flooding and erosion)
- Droughts in Indonesia and Australia; wildfires
- Weaker monsoons and even droughts in India and SE Asia
- Reduces the upwelling of cooler, nutrient-rich waters from the deep - along the west coast of South and Central America.

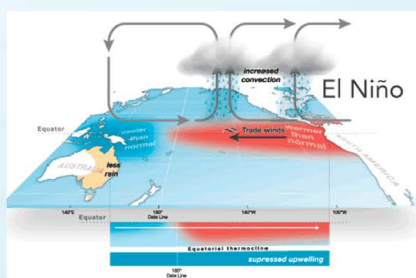


Fig. 1 - Depiction of El Niño Phenomenon

La Niña

- Also called El Viejo, anti-El Niño, or simply "a cold event"
- Normal easterly winds along the equator become even stronger
- May last 1-3 years, unlike El Niño (which usually lasts no more than a year)

Impacts

- Heavier rains in SE Africa, catastrophic floods in Australia
- Drier-than-normal conditions in S. America
- Summer Monsoon rainfall - greater than normal rainfall in India; beneficial for agriculture dependent Indian economy
- Off the west coast of the Americas, upwelling increases, bringing cold, nutrient-rich water to the surface.

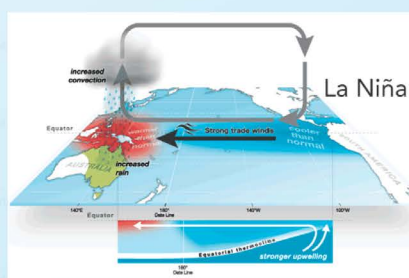


Fig. 2 - Depiction of La Niña Phenomenon

Oceanic Nino Index (ONI)

- It is a measure of the departure from normal sea surface temperature in the east-central Pacific Ocean.
- It is the standard means by which each El Niño episode is determined, gauged, and forecast.

El Nino Southern Oscillation (ENSO)

Describes the fluctuations in temperature between the ocean and atmosphere **in the east-central Equatorial Pacific**

Significance:

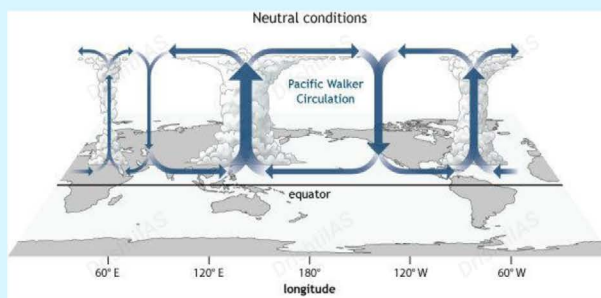
- Ability to change the global atmospheric circulation, influencing temperature and precipitation worldwide

States of ENSO:

- The two opposite phases - **El Niño** and **La Niña**
- The middle of the continuum - **Neutral**

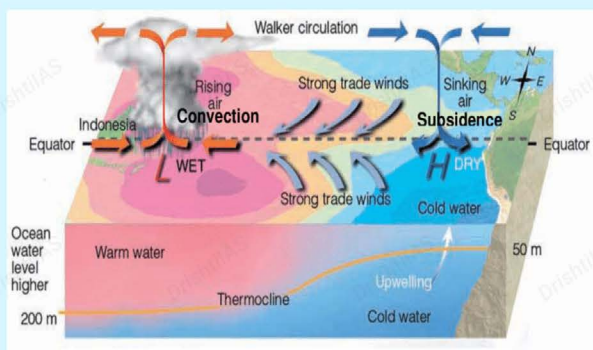
Walker Circulation (WC)

- An **atmospheric system of air flow** in the equatorial Pacific Ocean
 - The trade winds across the tropical Pacific flow from east to west: air rises above the warm waters of the western Pacific, flows eastward at high altitudes, and descends over the eastern Pacific
- WC and ENSO:
 - A weak/reverse WC produces **El Niño**
 - Stronger WC results in **La Niña**



Normal (non ENSO) Conditions in the Pacific Ocean

NEUTRAL ENSO



- **Trade winds (easterlies) blow west** along the equator, taking warm water from S. America towards Asia
- To replace that warm water, **cold water rises from the depths** — a process called **upwelling**
 - **El Niño and La Niña** are two climate patterns that **break these normal conditions**
- During an El Niño, sea level pressure tends to be lower in the eastern Pacific and higher in the western Pacific while the opposite tends to occur during a La Niña
 - This see-saw in atmospheric pressure between the eastern and western tropical Pacific is called the **Southern Oscillation (SO)**

Biodiversity Heritage Sites

Well-defined, unique, ecologically fragile ecosystems with high diversity of wild and domesticated species, presence of rare and threatened species, and keystone species and having significant cultural, ethical or aesthetic values.

Declaring Authority

Under Section 37(1) of 'Biological Diversity Act, 2002', The State Government may, from time to time, in consultation with the local bodies, notify in the Official Gazette, areas of biodiversity importance as BHS.

Restrictions Imposed

Creation of BHS may not put any restriction on the prevailing practices and usages of the local communities, other than those voluntarily decided by them.

As of November 2022, there are

35 BHS in India.

First and Latest Additions

First: Nallur Tamarind Grove in Bengaluru, Karnataka (January 2007)

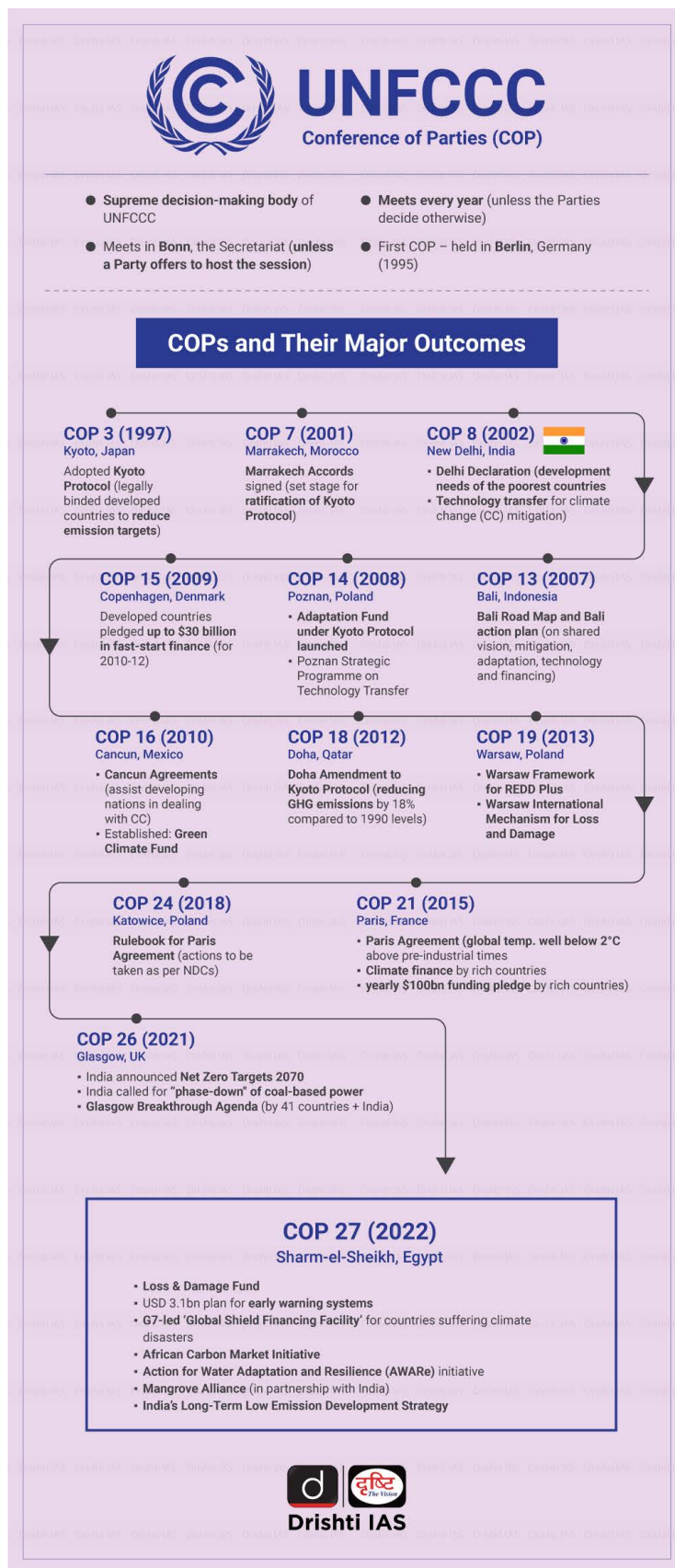
Latest: Arittapatti in Madurai, Tamil Nadu (November 2022) (India's 35th BHS)

Last 5 Additions

- Debbari or Chabimura in Tripura (September 2022)
- Betlingshib & its surroundings in Tripura (September 2022)
- Hajong Tortoise Lake in Assam (August 2022)
- Borjuli Wild Rice Site in Assam (August 2022)
- Amarkantak in Madhya Pradesh (July 2022)



Note:



Note:

Treaties Against Nuclear Weapons

Part - I

Nuclear Weapons

- The most dangerous weapons on earth; a **bomb or missile that uses nuclear energy to cause an explosion**.
- Nuclear weapons release energy either by **nuclear fission (atomic bombs) or nuclear fusion (hydrogen bombs)**.
- Even a single weapon is potent of **destroying a whole city**, potentially **killing millions, jeopardising the natural environment** and lives of future generations.
- They were used for the **first and last time in WW-II** by the US in 1945 on **Hiroshima and Nagasaki**.

Treaty on the Non-Proliferation of Nuclear Weapons (NPT 1970)



- **Objective:**
 - Prevent the spread of nuclear weapons and its technology
 - Foster peaceful uses of nuclear energy
 - Further the goal of nuclear disarmament
- **Member States:**
 - 191 with **5 nuclear-weapon states (NWS)** (US, Russia, UK, France & China)
- **Nuclear-Weapon States:**
 - Those who **manufactured & exploded** a nuclear weapon or nuclear explosive device **before 1st January 1967**
- **Significance:**
 - **Only binding treaty** to the goal of disarmament by the NWS
- **India and NPT:**
 - India (along with Pakistan, Israel, North Korea, and South Sudan) is **not a member**
 - Opposes it as a **discriminative disarmament policy**
 - India's policy - **No First Use against NWS and no use against non-NWS**
- **NPT Review Conference:**
 - **Undertakes review** of the treaty's implementation **quinquennially**



Drishti IAS



Note:

Treaties Against Nuclear Weapons

Part II



Missile Technology Control Regime (MTCR) (1987)

- An informal and voluntary partnership
- Not legally binding
- Established in 1987 by G7 countries

Objective: To prevent the proliferation of missile and UAV (Unmanned Aerial Vehicle) technology capable of carrying >500 kg payload for range >300 km

MTCR Categories

Category I Items	Category II Items
<ul style="list-style-type: none"> • Complete rocket and UAV systems (>500 kg payload for >300 km) • Such items are subjected to unconditional strong presumption of denial for export 	<ul style="list-style-type: none"> • Less-sensitive and dual-use missile related components and other complete missile systems (range >300 km) • Their export is subject to licensing requirements

35 Member Countries

India inducted into the MTCR in 2016 as the 35th member

China not a member

Mandate on Members

- Prohibition from supplying missiles and UAV systems controlled by the MTCR to non-members.
- In 1992, the ambit was extended to all Weapons of Mass Destruction - nuclear, chemical & biological.

Secretariat: No formal Secretariat; France serves as MTCR's Point of Contact

MTCR and UN: No formal linkage but remains committed to the UN's non-proliferation and export control efforts

Significance for India

- Can procure high-end missile technology
- Can run joint programmes for development of UAVs with other countries

Comprehensive Nuclear-Test-Ban Treaty (CTBT) (1996)

Objective: Ban all nuclear explosions - everywhere, by everyone

Negotiated At: Conference on Disarmament in Geneva 1996 (adopted by UNGA)

185 Signatories

Out of 44, 36 countries have ratified

Treaty will enter into force after all 44 States listed in Annex 2 will ratify it (States having nuclear facilities at the time the Treaty was negotiated and adopted)

8 Annex-2 Countries Not Ratified

- China, North Korea, Egypt, India, Iran, Israel, Pakistan and the US
- India, North Korea and Pakistan haven't also signed the Treaty

CTBT Organisation

- Promotes the Treaty so that it can enter into force
- Headquartered in Vienna



Note:

SUCCESSOR TO APOLLO

The much-hyped Artemis is the successor to Nasa's famous Apollo space programme.

By 2025, it aims to return man to the moon and later establish a base that may serve as a stepping stone to future human exploration of Mars

THE FIRST OF MANY

Artemis I entails a 25-day flight bringing the Orion capsule to within 97km of the lunar surface before flying 64,400km beyond the moon and looping back to Earth. The capsule is expected to splash down at sea on Dec 11. For this mission, Orion carried a simulated crew of three fitted with sensors to measure radiation levels and other stresses that astronauts would experience.

Artemis 2 will take off in 2024 and will carry a crew of three on a lunar orbit without any touchdown on the moon.

Artemis 3 is scheduled for 2025, and is expected to ferry astronauts to the moon for the first time since the Apollo missions.

Note:



drishti

PT. JAWAHARLAL NEHRU

FIRST PRIME MINISTER OF INDIA

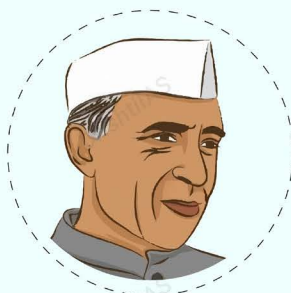


Famous Speech

Tryst with Destiny

Pre-Independence Contribution

- General Secy of All India Congress Committee (AICC) 1923
- In 1929-31, drafted 'Fundamental Rights and Economic Policy' resolution
- Led protests against Simon Commission in 1928
- Presided over of INC Lahore Session (1929) & Lucknow session (1936)
- Second Satyagrahi (1940) of Individual Satyagraha (first - Vinoba Bhave)
- Moved the 'Quit India' movement resolution at the AICC session Bombay (1942)
- Elected as President of INC for seven times (till 1954)



(14th November 1889 -27th May, 1964)

Books Written

- The Discovery of India
- Glimpses of World History
- An Autobiography
- Letters from a Father to His Daughter

Post-Independence Contribution

- Introduced - **Objectives Resolution** (guiding principles for drafting the Constitution)
- Promoted industrialization by carrying out the **first five-year plans**
- **Non-Alignment Movement (NAM)** - his greatest geopolitical accomplishment
- Promoted **democratic socialism**
- Established **parliamentary supremacy over the military** (prevented India from becoming another junta-ruled Third World autocracy)
- Laid Foundation of:
 - **Scientific base** for India's space triumphs
 - **Dual-track nuclear programme**



Note:

Genetically Modified Crops

About

- Genetic modification of plants involves **adding a specific stretch of DNA into the plant's genome**, giving it new or different characteristics
- Also called **Transgenic crops**

Objective

- Increase yield
- Increase tolerance to herbicides
- Improve nutritional value
- Provide resistance to disease/drought

Global Cultivation

- Top 5 GM growing countries - **USA, Brazil, Argentina, India and Canada**
- Major GM Crops - **Soybean, maize, cotton and canola**

GM Crops in India

- Bt cotton** - **only one GM crop approved**, (90% of India's total cotton acreage) (resistance against pink bollworm)
- Ht Bt cotton** - resistance against **glyphosate** (herbicide)
- DMH-11 mustard** - **recommended for commercial use** (high yield)
- Golden rice** - probably the best variety of GM rice (**Vitamin A**)

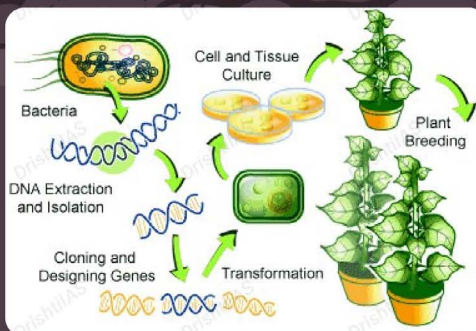
Concerns

- Manipulation of GM Seed Cost
- Seeds don't create viable offsprings
- Insect-resistant plants harm non-targeted species too
- Intermixing violates natural plants' intrinsic values



GM Crop Regulation

- Statutory Provision:**
 - Rules for Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms (HM) Genetically Engineered Organisms or Cells, 1989 under the Environment Protection Act (1986).
- Statutory Bodies:**
 - Genetic Engineering Appraisal Committee (GEAC)** (under MoEF&CC) - **administers commercial release** of GMC
 - Recombinant DNA Advisory Committee (RDAC)**
 - Institutional Biosafety Committee (IBSC)**
 - Review Committee on Genetic Manipulation (RCGM)**
 - State Biotechnology Coordination Committee (SBCC)**



Cartagena Protocol on Biosafety (2000)

- It seeks to protect biological diversity from the potential risks posed by **Living Modified Organisms** resulting from **modern biotechnology**.
- India is a signatory** to this protocol.

Governor



Eligibility Criteria

- Must be a **citizen of India**
- At least **35 years** of age
- Must **not be a member of (either) house** of Parliament/State Legislature
- Must not hold any **office of profit**

'Dual Capacity'

- **Constitutional head of the state** and **Representative of the Union government**

Appointment and Tenure (Part VI)

- Appointed by President (**Article 153**)
- One person can be appointed as Governor for **2+ States (7th Const. Amendment in 1956)**
- Holds the office at the **Pleasure of the President** (maximum **5 years**)

Ending Tenure before 5 Years

- **Dismissal by President** (on advice of the Council of Ministers headed by PM)
 - Dismissal of governors without a valid reason is not permitted
- On grounds of **acts upheld by courts as unconstitutional** and malafide
- **Resignation** by the governor

Powers (Part VI)

- Article 161: **Pardoning powers**
- Article 164: Power to **appoint the CM and other Ministers**
- Article 176: **Special Address** by Governor
- Article 200: Power to **(withhold) assent/reserve a bill** (Legislative Assembly)
- Article 213: Power to **promulgate Ordinances**

Responsibilities

- **Appoints** – CM, other Ministers, Advocate General of State, Members of State PSC, judges of HC and districts
- Act as **ex-officio chancellor** of state Universities

Note:

Governor

Part II

Governors Committee (1971)

- Laid down the **responsibility on the Governor to send a regular report** about the political situation of the State to the Centre
 - This may further lead to invoking **Article 356 (President's Rule)**

Recommendations of Important Commissions

- **Administrative Reforms Commission (1968):**
 - **Governor's report regarding Article 356 should be objective**, prepared by his own judgement in this regard
- **Rajamannar Committee (1971):**
 - **Revoke Articles 356 & 357** from the Constitution but keep the necessary provisions against arbitrary action of Centre
- **Sarkaria Commission (1988):**
 - **Article 356 be used in very rare cases**
- **Justice V. Chelliah Commission (2002):**
 - **Article 356 be used only as a remedy of the last resort** after exhausting all actions under:
 - **Articles 256** (executive power of state in compliance with laws made by the Parliament)
 - **Article 257** (executive power of State to not impede executive power of the Union)
 - **Article 355** (State govts. to comply with the provisions of the Constitution)
- **Punchhi Commission (2010):**
 - **Articles 355 & 356 be amended**

Major Issues

- Governor's role in invoking Article 356 - **often misused by the Centre**
- No provisions laid down for **Governor-State Govt. engagement in case of difference of opinion**
- **No constitutional guidelines** for exercise of the Governor's powers
- Negative terms like an **agent of the Centre, puppet and rubber stamps** are often used by state govts. to describe the Governor

Important SC Judgements

- **S.R. Bommai Judgement (1994):**
 - The **breakdown of constitutional machinery implied a virtual impossibility, and not a mere difficulty**, in carrying out governance in a State. Classified failure of constitutional machinery as:
 - **Political crises**
 - **Internal subversion**
 - **Physical breakdown**
 - **Non-compliance** with const. directions of the Union Executive
- **Nabam Rebia Judgement (2016):**
 - The Governor's discretionary power (Article 163) should not be arbitrary, rather **dictated by reason**
- **BP Singhal Case (2010):**
 - President's reasons for removal (Governor) will be **presumed compelling & valid** but if the Governor approaches the Court, **Centre will have to justify its decision**

Governor

(Part - III)

President - Article 52 -78 in (Part V); Governor - Article 153 -167 (Part VI)

Governor and President - Similarities

Point of Similarity	Characteristics
Head	<ul style="list-style-type: none"> Both are nominal executive heads (constitutional/ titular heads) at their level
Promulgating Ordinances	<ul style="list-style-type: none"> Both are empowered (under Article 123/213 - President/Governor)
Civil and Criminal Proceedings	<ul style="list-style-type: none"> Both are immune from any criminal proceedings during tenure; cannot be arrested or imprisoned Civil proceedings can be instituted after giving a 2-months' notice
Re-appointment/Re-election	<ul style="list-style-type: none"> Both are eligible for reappointment/re-election to the same office
Appointing Officers	<ul style="list-style-type: none"> What President appoints at National level, Governor appoints at state level (members of Public Service Commission, Judges of courts, Election Commissioners etc.)
Role in Legislature	<ul style="list-style-type: none"> Power to summon or prorogue the State/Union Legislature and dissolve the State LA/Lok Sabha
Financial Powers	<ul style="list-style-type: none"> Constituting Finance Commission at State/Union level
Situational Discretionary Power	<ul style="list-style-type: none"> Appointing PM/CM (in case of PM/CM's death or when no party has clear majority) Dismissal of Council of Ministers Dissolution of Lok Sabha/ State LA

Governor v/s President - Differences

Point of Difference	President	Governor
Election	Indirectly elected	Appointed by President
Pleasure Doctrine	No concept of Pleasure doctrine	Serves at the Pleasure of the President
Declaring Scheduled Area	Can declare any area as scheduled area	Role is limited to consultation
Amending Constitution	His assent to the bill is required	No role in a Constitutional Amendment Bill
Pardoning Power	Can pardon a death sentence/punishment by a court-martial	Can't pardon a death sentence, no role in affairs of military
Constitutional Discretionary Power	No Constitutional Discretion	Constitutional Discretion in reserving a bill , imposition of President's rule & administrating an adjoining UT
Condition of Impeachment	Violation of the Constitution	No grounds laid

Reservation for Economically Weaker Section

Economically Weaker Section (EWS):

- People in the **Unreserved** category having **annual income < 8 LPA**
- **Owning property:** <5 acres (agricultural land); <200 m² (residential land)

EWS Quota:

- Based on the recommendations of **S.R. Sinho Commission (2010)**
- Introduced under the **103rd Constitutional Amendment (2019)** inserting Articles 15 (6) and 16 (6)
- Provides **reservation of 10% to EWS** in jobs and admissions in educational institutions
- Both **Centre and States** can provide reservation to the EWS

Supreme Court's Stand on EWS:

- **SC upheld the validity of 103rd Amendment**
- Majority view - EWS quota **doesn't violate Basic Structure** of the Constitution
- Minority view - **Excludes poorest of the poor** among SCs, STs and OBCs

Caste-based Reservation in India:

- **Constitutional Provisions:**
 - Govt. Ed. Institutions - Article 15 - (4), (5), and (6)
 - Govt. Jobs - Article 16 - (4) and (6)
 - Legislatures (State/Union) - Article 334
- **OBC Reservation** - introduced in **Mandal Commission Report (1991)**
- Concept of **Creamy layer** exists only in OBC reservation (and not in SC/ST)
- **Cap** on caste-based reservation - **50%** (in **Indra Sawhney case 1992**)
- First major SC verdict on Reservation - **Champakam Dorairajan case 1951**
 - It led to the **First Amendment in the Constitution** which added **Clause (4)** to Article 15

Note:

Biological Weapon & Chemical Weapon Conventions

Biological Weapon Convention (BWC) 1975

Formal Name:

- The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction.

Negotiated at:

- Conference of the Committee on Disarmament in **Geneva, Switzerland**

Prohibits:

- Development, production, acquisition, transfer, stockpiling and use of **bioweapons**

Members:

- 184 States Parties** and **4 Signatory States** (India - Signatory)

Significance:

- First multilateral disarmament treaty banning an entire category of **Weapons of Mass Destruction (WMD)**
- Supplements the **1925 Geneva Protocol**

Biological weapons use **microbiological agents (such as bacteria, viruses or fungi)** or toxins to intentionally cause death or harm to humans, animals, or plants.



Chemical Weapon Convention (CWC) 1997

Negotiations Began at:

- UN Conference on Disarmament 1980**

Mandates:

- Destroying old and abandoned chemical weapons
- Members to declare **riot-control agents (tear gas)** in their possession

Established:

- Organisation for the Prohibition of Chemical Weapons** in 1997 to implement + enforce the terms of the CWC

Members:

- 192 state parties** and **165 signatories** (India - Signatory)

Prohibits:

- Development, production, acquisition, stockpiling, retention, transfer and usage of chemical weapons
- Assisting other States** to indulge in activities prohibited by the CWC
- Using riot-control devices as '**warfare methods**'

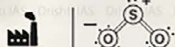
Chemical Weapon is a chemical used to cause intentional **death or harm through its toxic properties**. Also includes **munitions, devices and other equipment** specifically **designed to weaponize toxic chemicals**.



Note:

Air Pollutants

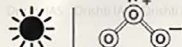
Sulphur Dioxide (SO₂)



It comes from the consumption of fossil fuels (oil, coal and natural gas). Reacts with water to form acid rain.

Impact: Causes respiratory problems.

Ozone (O₃)



Secondary pollutant formed from other pollutants (NOx and VOC) under the action of the sun.

Impact: Irritation of the eye and respiratory mucous membranes, asthma attacks.

Nitrogen Dioxide (NO₂)



Emissions from road transport, industry and energy production sectors. Contributes to Ozone and PM formation.

Impact: Chronic lung disease.

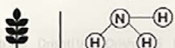
Carbon Monoxide (CO)



It is a product of the incomplete combustion of carbon-containing compounds.

Impact: Fatigue, confusion, and dizziness due to inadequate oxygen delivery to the brain.

Ammonia (NH₃)



Produced by the metabolism of amino acids and other compounds which contain nitrogen.

Impact: Immediate burning of the eyes, nose, throat and respiratory tract and can result in blindness, lung damage.

Lead (Pb)



Released as a waste product from extraction of metals such as silver, platinum, and iron from their respective ores.

Impact: Anemia, weakness, and kidney and brain damage.

Particulate Matter (PM)



PM10: Inhalable particles, with diameters that are generally 10 micrometers and smaller.

PM2.5: Fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

Source: Emitted from construction sites, unpaved roads, fields, fires.

Impact: Irregular heartbeat, aggravated asthma, decreased lung function.

Note: These major air pollutants are included in the Air quality index for which short-term National Ambient Air Quality Standards are prescribed.



Note:



Nutrient Based Subsidy Scheme

About:

- A fixed rate of subsidy (in ₹ per Kg) decided on an annual basis
- Being implemented since 2010

Implemented by:

- Department of Fertilisers, Ministry of Chemicals & Fertilizers

Ambit of NBS:

- Given on nutrients - Nitrogen, Phosphate, Potash and Sulphur
- For Phosphatic and Potassic (P&K) fertilisers
- Doesn't include Urea based fertilisers
- NBS is available for imported complex fertilisers except Ammonium Sulphate

Aim:

- Ensure the availability of fertilisers to farmers at an affordable price
- Increase consumption of P&K fertilizers to achieve optimum NPK ratio (4:2:1)

Fertilisers in India:

- 3 basic fertilisers – Urea, Diammonium Phosphate (DAP), and Muriate of Potash (MOP)
- Urea is the most – produced, consumed, imported and physically regulated fertiliser of all
- Urea is subsidised only for agricultural uses

Nutrient	Main Source
Nitrogen (N)	Urea
Phosphorus (P)	DAP
Potassium (K)	MOP



Note:

INTERPOL



About

- Official Name – International Criminal Police Organization (ICPO - INTERPOL)
- Establishment year – 1923
- Member states – 195
 - India has been a member since 1956.
- Headquarters – Lyon, France
An inter-governmental organization

Objective

- Collects and disseminates information from various police forces** to facilitate criminal investigation across the globe.
 - Doesn't have law enforcement powers such as arrest.

Composition

- President** (head of Interpol) – **elected for 4 years**
- Secretary General** (performs day-to-day activities) – **for 5 years**
- Specialized Secretariat** – deals with specific issues like **cybercrime, terrorism, human & drug trafficking, financial & environmental crime, etc.**
- General Assembly** – supreme governing body (meets once a year). India hosted INTERPOL General Assembly in 2022.

INTERPOL Notices

These are international requests for cooperation or alerts allowing police in member countries to share critical crime-related information.



MISSING PERSON



WARNINGS AND INTELLIGENCE



WANTED PERSON



UNIDENTIFIED BODIES



IMMINENT THREAT



ADDITIONAL INFORMATION



MODUS OPERANDI



GROUPS AND INDIVIDUALS SUBJECT TO UNSC SANCTIONS

INTERPOL National Central Bureau (NCB)

- The NCB is the designated contact point for Interpol.
- India's Interpol NCB – **Central Bureau of Investigation (CBI)**

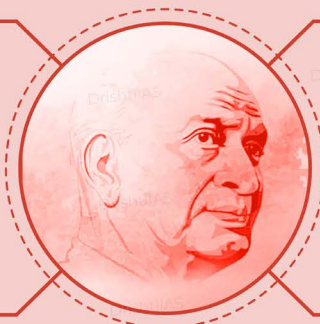
Note:

SARDAR VALLABHBHAI PATEL

IRON Man of India: 31 October 1875 - 15 December 1950

About

- ↔ First Home Minister and Deputy Prime Minister of India
- ↔ Bestowed the title of 'Sardar' by women of Bardoli
- ↔ Remembered as the 'Patron Saint of India's Civil Servants'



Committees Headed

- ↔ Advisory Committee on Fundamental Rights
- ↔ Committee on Minorities and Tribal and Excluded Areas
- ↔ Provincial Constitution Committee

Vision

- ↔ Envisaged – Ek Bharat Shreshtha Bharat
- ⇒ National Unity Day celebrated on his birth anniversary
- ⇒ Statue of Unity (Gujarat) - inaugurated in 2018
- ↔ Referred to the Civil Servants as the 'steel frame of India'

Major Contributions

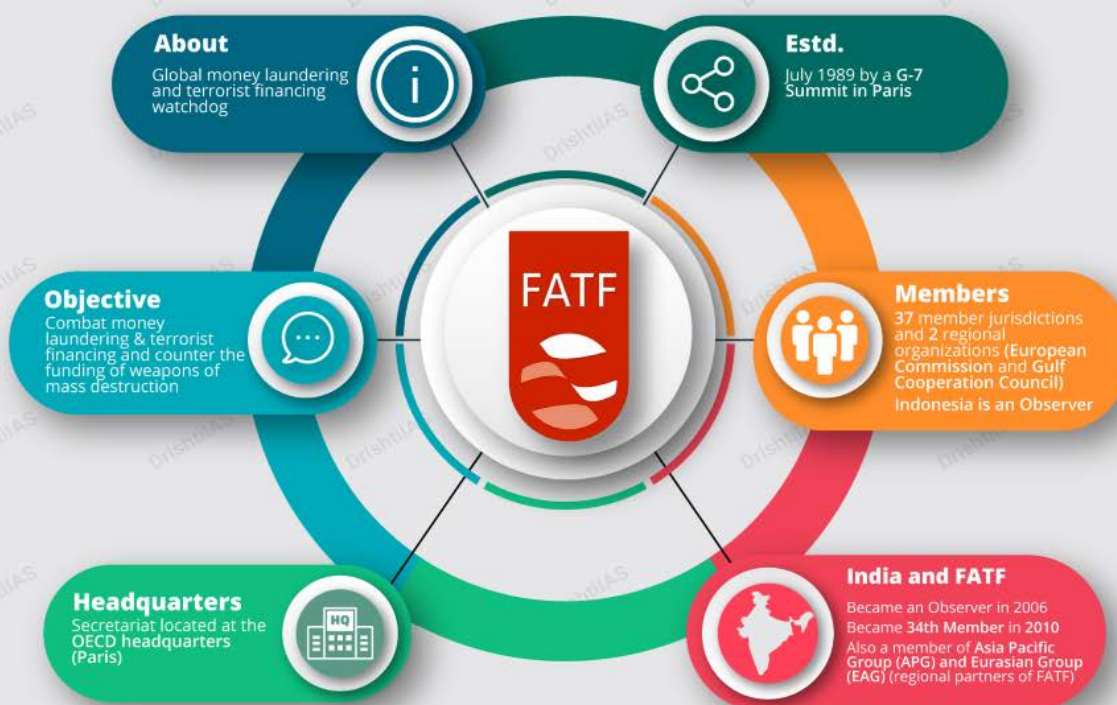
- ↔ Integrated Kheda (1918) and Bardoli (1928) Movements with the national freedom movement
- ↔ Presided over the 46th session of the INC (1931) called upon to ratify the Gandhi-Irwin Pact
- ↔ Integrated about 565 Princely States in the Union of India
- ↔ Established the modern all-India services system
- ⇒ Civil Services Day - 21 April; commemorates Sardar Patel's first address to the probationers of Administrative Services Officers



Note:



Financial Action Task Force



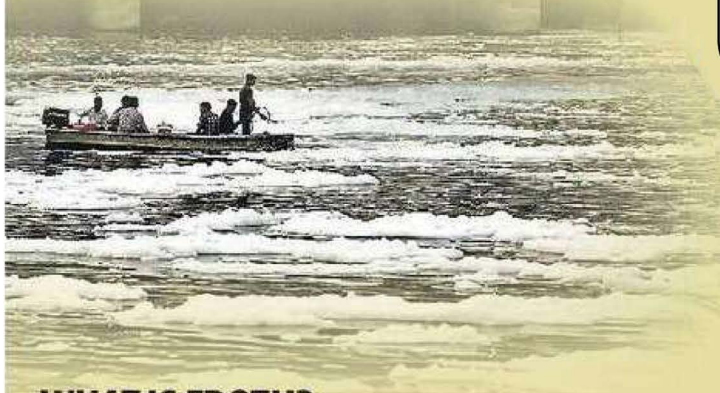
FATF Lists

- **Grey List:**
 - Aka "Increased Monitoring List"
 - Includes countries considered safe haven for supporting terror funding and money laundering
 - Serves as a warning that the country may enter the blacklist
- **Black List:**
 - Includes **Non-Cooperative Countries or Territories (NCCTs)** that support terror funding and money laundering activities
 - Countries - **Iran, North Korea and Myanmar**
- **Consequences of being Greylisted:**
 - **Economic sanctions** from financial institutions affiliated with FATF (IMF, World Bank, ADB)
 - **Problem in getting loans** from such financial institutions and countries
 - **Reduction in international trade**
 - **International boycott**

Note:

River of foam cuts across Delhi

Every year, as winter sets in, thick sheets of foam blanket the Yamuna. This froth can have adverse effects if consumed, or even touched



WHAT IS FROTH?

Foam bubbles are produced when organic matter decomposes. These foam-producing molecules have one end that repels water and another that attracts water. They work to reduce the surface tension on the water surface. These foam bubbles are lighter than water, so they float on the surface as a thin film that gradually accumulates.

What causes Yamuna's froth blanket?

- Untreated sewage may contain soap/detergent particles
- Industrial run-off
- Organic matter from decomposing vegetation
- Presence of filamentous bacteria that let out surfactant molecules
- Pollutants from sugar and paper industries in UP that travel through the Hindon Canal

Health hazards

- Short-term exposure can lead to skin irritation, allergies
- Ingestion may cause gastrointestinal problems and diseases like typhoid
- Long term exposure can cause neurological issues and hormonal imbalances

How can froth formation be stopped?

IN THE SHORT-TERM

- Rid Okhla pondage of water hyacinth
- Detergents must be biodegradable so they do not persist and lose their ability to cause foam

IN THE LONG TERM

- UP, Haryana, Delhi need to upgrade sewage treatment plants
- Industrial pollution to be stopped
- Increasing the flow of the river

The substances that pollute the Yamuna

Biological O₂ demand Standard: 3mg/l or less

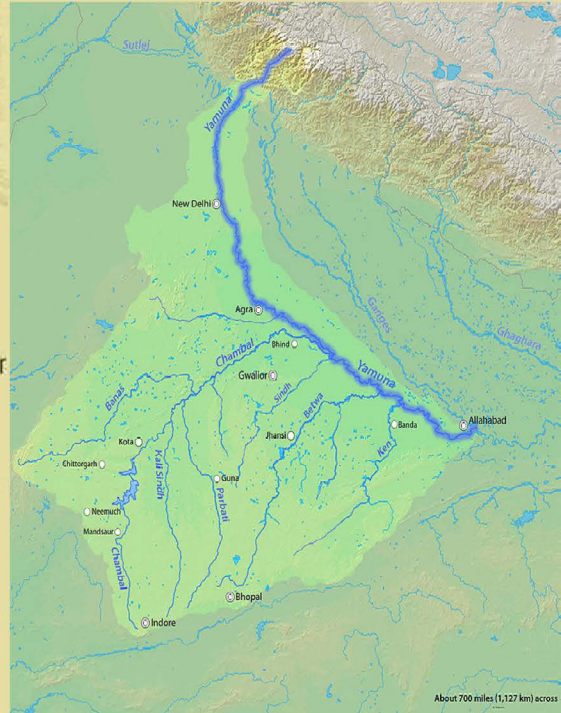
BOD is a measure of the amount of oxygen required to remove waste organic matter from water in the process of decomposition by aerobic bacteria.

Dissolved O₂ demand Standard: 5mg/l or more

DOD is the amount of oxygen in aquatic environments that is accessible to fish, invertebrates, and all organisms in the water.

Faecal coliform Standard: 500-1,000 ml

Faecal Coliform: These are bacterial organisms most commonly used to monitor the removal of pathogens from wastewater treatment plants.



Yamuna River

Length: 1376 km

Source: The river Yamuna, a major tributary of river Ganges, originates from the Yamunotri glacier in Uttarkashi district of Uttarakhand.

Basin: It meets the Ganges at the Sangam (where Kumbh mela is held) in Prayagraj, Uttar Pradesh after flowing through Uttarakhand, Himachal Pradesh, Haryana and Delhi.

Important Dams: Lakhwar-Vyasi Dam (Uttarakhand), Tajewala Barrage Dam (Haryana) etc.

Important Tributaries: Chambal, Sindh, Betwa and Ken.

Note:



CYCLONE

Cyclones are rapid **inward** air circulation around a **low-pressure** area.

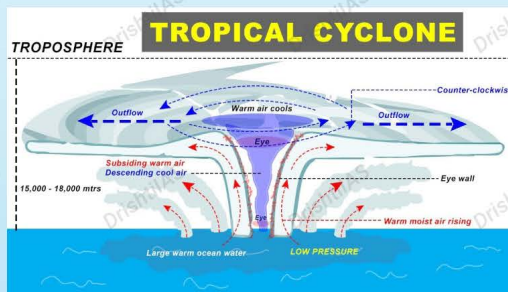


Cyclone v/s Anticyclone

Pressure System	Pressure Condition at the Center	Pattern of Wind Direction	
		Northern Hemisphere	Southern Hemisphere
Cyclone	Low	Anticlockwise	Clockwise
Anticyclone	High	Clockwise	Anticlockwise

Classification

- **Tropical Cyclones;** originate between the **Tropics of Capricorn and Cancer**
- **Extra Tropical/ Temperate Cyclones;** originate in the **Polar Regions**



Conditions for Formation

- Large sea surface with temperature $>27^{\circ}\text{C}$.
- Presence of the **Coriolis force**
- Small **variations in the vertical wind speed**
- **A pre-existing weak low- pressure area**
- **Upper divergence** above the sea level system

Different Names for Tropical Cyclones

- **Typhoons** - Southeast Asia and China
- **Hurricanes** - North Atlantic and eastern Pacific
- **Tornados** - West Africa and southern USA
- **Willy-willies** - Northwest Australia
- **Tropical Cyclones** - Southwest Pacific and Indian Ocean

Nomenclature

- Nodal Authority - **World Meteorological Organization (WMO)**
- Indian Ocean Region - **Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand** contribute to naming cyclones that occur in this region.

Cyclones in India

- **Bi-annual Cyclone Season** - March to May and October to December
- Recent Cyclones - **Tauktae, Vayu, Nisarga and Mekanu** (in Arabian Sea) and **Asani, Amphan, Fani, Nivar, Bulbul, Titli, Yaas and Sitrang** (in Bay of Bengal)

Note:

Mission LiFE

Lifestyle For Environment
(Encourage P3 i.e. Pro Planet People)

Approach



Focus on
Individual Behaviours



Co-create Globally



Leverage
Local Cultures

- Concept was introduced by Prime Minister at **COP26** in Glasgow in November 2021.
 - **LiFE Global Movement** invites ideas from across the world aimed at individuals, households and communities to drive climate-friendly behaviours.
- **Mission LiFE** has been launched at the Statue of Unity in Gujarat.
 - To mobilise at least one billion Indians and other global citizens to take individual and collective action for conserving the environment in the **period 2022-28**.
- **Piloted by NITI Aayog** and **implemented by the Union Ministry of Environment, Forest and Climate Change**.

According to UNEP, if **1** out of **8 billion** people worldwide **adopt environment-friendly behaviours** in their daily lives, **global carbon emissions could drop upto 20%**.

Examples Set by India

- **Swachh Bharat Mission (SBM)** led to the use of over 100 million toilets in rural India within a span of 7 years.
- **Ujjwala Scheme** increased households with LPG connections from 62% in 2015 to 99.8% in 2021.
- **Traditional Indian practices** such as adaptive architectural forms that minimise electricity consumption and dietary preference for plant-based foods and millets can serve as foundations for LiFE.

The lowdown on a vexed issue

What are electoral bonds?

Sold four times a year (in January, April, July and October), electoral bonds allow political parties to accept money from donors whose identities are kept anonymous. They are sold in multiples of ₹1,000, ₹10,000, ₹1 lakh, ₹10 lakh, and ₹1 crore. The scheme was first floated in 2017 and implemented in 2018

Who can sell them?

SBI is the sole authorised bank to sell and redeem the bonds. Customers of other banks can also purchase the bonds via different payment channels provided to them. However, a political party can only redeem the bond from one of the 29 authorized branches of the bank.

Which parties can receive donations via electoral bonds?

A political party must also have at least 1% vote share in most recent general elections or assembly elections to receive donations via electoral bonds.

What is the controversy around them?

The scheme has been challenged on the grounds that it lacks transparency. Those opposed to it have also asserted that a large chunk of the donations have gone to the BJP, the ruling party. In 2019-20, the BJP received over 75% of the electoral bonds, according to the Election Commission data. Critics have also argued that since the bonds are sold through a government-owned bank there is a possibility that the party in power can find out who is funding their political rivals

Note:

Chief of Defence Staff

General Anil Chauhan (Appointed on September 30, 2022)



- History**
 - Recommended by:
 - K. Subrahmanyam Committee 1999
 - Lt General D.B. Shekathkar (retd) Committee 2015
 - First CDS of India: General Bipin Rawat (Appointed on January 1, 2020)
- Qualification**
 - Any serving or retired Lieutenant General, Air Marshal and Vice Admiral
 - Age should be below 62 years on the date of his appointment
- Appointment**
 - Appointed by Appointments Committee of the Cabinet
 - Holds office for 3 years, or until the age of 65, whichever comes first
- Provisions After Retirement**
 - He will not be eligible to hold any government office
 - No private employment without prior approval for a period of 5 years
- Role**
 - Permanent Chairman of the Chiefs of Staff Committee (COSC) and Secretary of the Department of Military Affairs (DMA)
 - Head of the Integrated Defence Staff
 - Member of:
 - National Security Council
 - Nuclear Command Authority
 - Defence Cyber Agency
 - Defence Space Agency
 - Defence Acquisition Council
 - Defence Planning Committee
 - CDS will not exercise any military command, including over the three service chiefs, to provide impartial advice to the political leadership
- Responsibilities**
 - Provide single-point military advice to government
 - Better management of country's strategic resources & nuclear arsenal
 - Bring synergy among Army, Navy & Air Force by resolving inter-service doctrinal, planning procurement & operational problems
 - Streamline long-term defence planning & procurement process
 - Integrate Service Headquarters with defence ministry & reduce civil-military divide

Other Countries with the Post of CDS

Country	Flag
ITALY	
FRANCE	
CHINA	
SPAIN	
UK	
CANADA	
JAPAN	

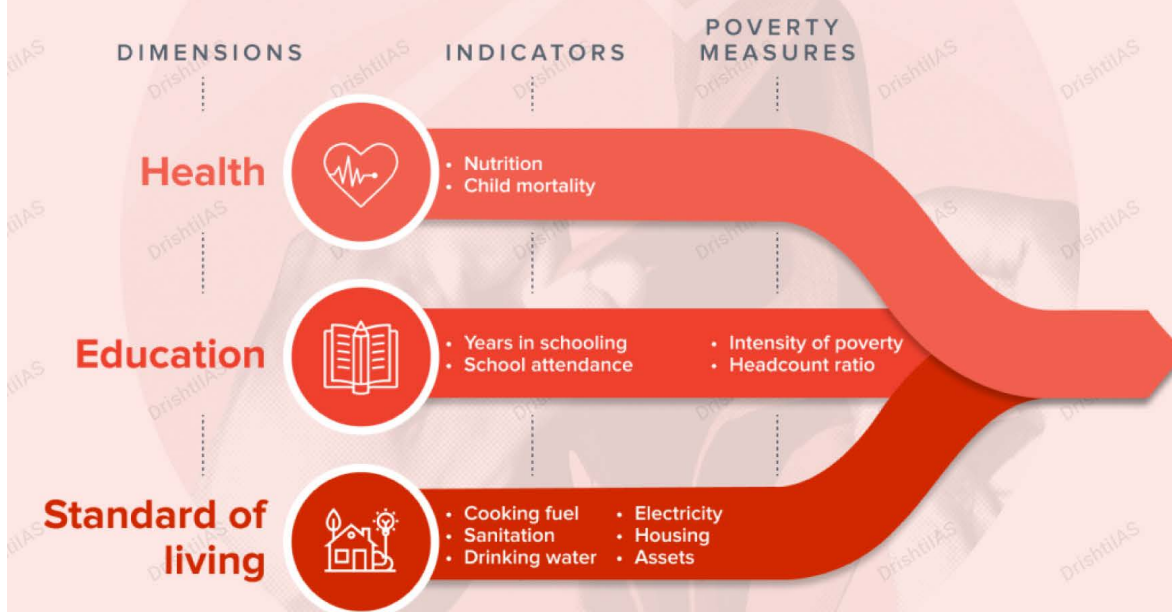
 

Note:

Global Multidimensional Poverty Index (MPI) 2022

- First launched in 2010
- Reflects the multiple deprivations that poor people face in the areas of education, health, and living standards.
- MPI ranges from 0 to 1, and higher values imply higher poverty
- Released by: United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI)

Dimensions and Indicators



Global Scenario

- 120 crores are multidimensionally poor
- About half of them are children under age 18
- Most of them live in Sub-Saharan Africa (57.9 crore), followed by South Asia (38.5 crore)
- India has by far the largest number of poor people worldwide followed by Nigeria



Indian Scenario

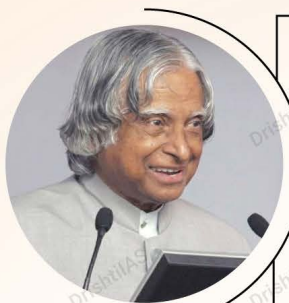
- 22.8 crore are multi-dimensionally poor (including 9.7 crore children)
- Number of poor people fell by about 41.5 crore between 2005-06 and 2019-21
- MPI value fell from 0.283 in 2005-06 to 0.069 in 2019-21, and the incidence of poverty fell from 55.1% to 16.4%
- Bihar, the poorest state in 2015-16, saw the fastest reduction in MPI value in absolute terms.
- The fastest reduction in relative terms was in Goa, followed by Jammu and Kashmir, Andhra Pradesh, Chhattisgarh and Rajasthan.

Note:



Dr. APJ Abdul Kalam

(Missile Man of India)



Birth

15th October 1931 Rameswaram
(Tamil Nadu)
Celebrated as **National Innovation Day**
and **World Students' Day**

India's 11th President
(2002-2007)

Death

27th July 2015 Shillong
(Meghalaya)

Major Contribution

- ✈ Pioneer in **Fiberglass Technology**
- ✈ Chief Executive of **Integrated Guided Missile Development Programme (IGMDP)**
- ✈ Led **Pokhran-II** nuclear testing
- ✈ Responsible for the evolution of ISRO's launch vehicle programme, particularly the **PSLV configuration**

- ✈ Put forward a countrywide plan called **Technology Vision 2020**
- ✈ Involved in the country's **Light Combat Aircraft** project.
- ✈ Sought to bring rural prosperity through **PURA (Providing Urban Amenities to Rural Areas)** Scheme

Awards Received

Padma Vibhushan (1990)

King Charles II Medal (2007)

Veer Savarkar Award (1998)

Padma Bhushan (1981)

Bharat Ratna (1997)

Hoover Medal (2008)

Literary Works

- ✈ "Wings of Fire", "India 2020 - A Vision for the New Millennium", "My journey"
- ✈ "Ignited Minds - Unleashing the power within India", "Indomitable Spirit", "Guiding Souls", "Envisioning an Empowered Nation", "Inspiring Thoughts" etc.

"Determination is the power that sees us through all our frustrations and obstacles. It helps in building our willpower which is the very basis of success."

Note:

Global Hunger Index 2022

About

- Measures and tracks hunger at global, regional, and national levels.
- Annual report; first published in 2006.

Prepared by

- European NGOs of Concern Worldwide and Welthungerhilfe.

GHI Indicators



Scoring

Calculated on a 100-point scale reflecting the severity of hunger - zero is the best score (implies no hunger) and 100 is the worst.

≤9.9 low	10.0-19.9 moderate	20.0-34.9 serious	35.0-49.9 alarming	≥50.0 extremely alarming
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GHI 2022

- Global Average Score: 18.2 (moderate)
- India's Rank and Score: 107/121 and 29.1 (serious)
- India's Neighbours: India is ranked below Sri Lanka, Nepal, Bangladesh, and Pakistan.
 - China, with a score of less than 5, is among the top 17 countries.

GHI Score Trend for India



Note:

Manipuri (Manipur)



Background

- ▶ **Association:** Rituals and traditional festivals.
- ▶ **Mythological Origin:** Celestial dance of Shiva and Parvati.
- ▶ **Origin of dance:** Natya Shastra, with influences and the culture fusion between various local folk dance forms.
- ▶ Gained prominence with the advent of **Vaishnavism in 15th century.**

Features

- ▶ **Performed by:** Females.
 - ▶ Unique emphasis on **devotion.**
 - ▶ Incorporates both **Tandava and Lasya.**
 - ▶ **Naga Bandha mudra:** Body is connected through **curves** in the **shape of '8'.**
 - ▶ **Ras Leela** is a recurring theme of the Manipuri dance recital.
- Main characters:**
- ▶ **Radha, Krishna and the Gopis.**



Instruments

- ▶ Pung
- ▶ Drum
- ▶ Flute

Famous Proponents

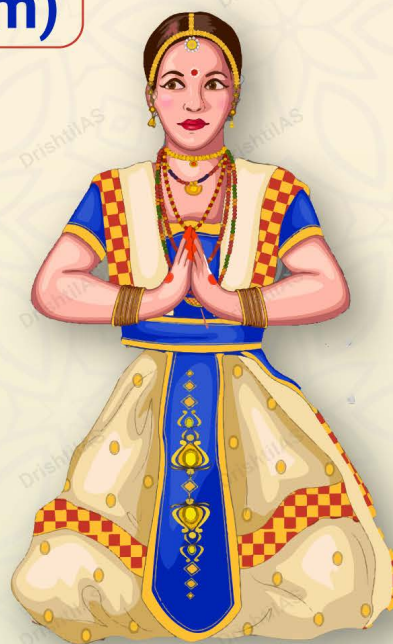
- ▶ Nayana
- ▶ Suverna
- ▶ Ranjana
- ▶ Darshana
- ▶ Guru Bipin Singha

Costume

- ▶ Embroidered stiff skirt.
- ▶ Short fine **white muslin skirt.**
- ▶ **White veil** over a special hair-do, falls gracefully over the face.
- ▶ Krishna: **Yellow dhoti, a dark velvet jacket** and a **crown of peacock feathers.**

Note:

Sattriya (Assam)



- ▷ Introduced by: **Sankaradeva (15th century A.D)**
- ▷ Based on: **Vaishnava faith**
- ▷ Source of Name: 'Sattras' (**Vaishnava monasteries**)
- ▷ Narrates **mythological stories of Vishnu**
- ▷ Mentioned in the **Natya Shastra (Bharat Muni)**
- ▷ Inspired by: **Bhakti Movement**
- ▷ Status of classical dance: **In Year 2000**

👉 Instrument

- ▷ Khol (drum)
- ▷ Cymbals (Manjira)
- ▷ Flute

👉 Costumes

Male dancers

- 👉 Dhoti
- 👉 Paguri

Females Dancers

- 👉 Traditional Assamese jewellery
- 👉 Ghuri
- 👉 Chador

👉 Two separate streams of Sattriya in modern times:

- ▷ Gayan-Bhayanar Nach
- ▷ Kharmanar Nach

👉 Ankia Naat:

- ▷ Type of **Sattriya**
- ▷ **Play or Musical Drama**
- ▷ Written in **Brajavali language**
- ▷ Also known as the **Bhaona**
- ▷ Narrates the stories of **Lord Krishna**

👉 Performed in group by **male monks** known as '**Bhokots**'



Note:

Nobel Prize in Economic Sciences 2022



Winner

Ben S. Bernanke, Douglas W. Diamond and Philip H. Dybvig for “Research on Banks and Financial Crises”.

Basis of Research

- 🏛 Reason behind bank's instability and long-term consequences of a banking crisis
- 🏛 Damage following bank collapse
- 🏛 Failure to establish new banks after fall in economy

Significance

- 🏛 The research reduces the risk of financial crisis developing into long-term depressions with severe consequences for society.

Contribution

Ben S. Bernanke:

- Analysed the Great Depression of the 1930s, and demonstrated how failing banks played a decisive role in the depression. Showed how bank runs were a decisive factor in the crisis becoming so deep and prolonged.
- Was the head of the US central bank, the Federal Reserve, when the 2008 crisis hit, put knowledge from research into policy.

Douglas W. Diamond and Philip H. Dybvig:

- Diamond showed how banks are better suited to assessing borrowers' creditworthiness and ensuring that loans are used for good investments.
- Worked together to develop theoretical models explaining why banks exist, how their role in society makes them vulnerable to rumors about their impending collapse, and how society can lessen this vulnerability.
- Presented a solution to bank vulnerability, in the form of deposit insurance from the government.

Indian Nobel Prize Laureates

- 🏛 In 1998, Amartya Sen was awarded the Nobel Prize in Economic Sciences “for his contributions to welfare economics”.
- 🏛 In 2019, Abhijit Banerjee was awarded the Nobel Memorial Prize in Economic Sciences with his wife Esther Duflo and Harvard University's Michel Kremer, for his experimental work in order to alleviate global poverty.

Note:

Nobel Peace Prize 2022



• Winners

- Belarus' Ales Bialiatski, Russian Human Rights Organisation Memorial, and Ukrainian Human Rights Organisation Center for Civil Liberties.
- The Peace Prize laureates represent civil society in their home countries.

Belarus' Ales Bialiatski

- Found the organisation Viasna (Spring) in 1996 in response to the controversial constitutional amendments that gave the president (Alexander Lukashenko) dictatorial powers.
- Over time, Viasna evolved into a "broad-based human rights organisation that protested against the authorities' use of torture against political prisoners".
- In 2020, he was one of the three recipients of the Right Livelihood Award by the Swedish Right Livelihood Foundation, sometimes referred to as the "Alternative Nobel".
- He is the fourth person to get the Nobel Peace Prize in Jail. Previous winners are Germany's Carl Von Ossietzky (1935), Aung San Suu Kyi of Myanmar (1991), and Liu Xiaobo of China (2010).

Russian Human Rights Organisation, Memorial

- Memorial was set up in 1987 with the aim of documenting repression and helping rehabilitate those who suffered under communism.
- Nobel Peace Prize laureate Andrei Sakharov (1954), and human rights advocate Svetlana Gannushkina were among the organisation's founders.
- It has been described as the largest human rights organisation in Russia, and in the present day, it helped in gathering information on "the political oppression and human rights violations in Russia".
- It was ordered shut in Dec 2021 for breaking a law requiring certain civil society groups to register as foreign agents.

Ukrainian Human Rights Organisation, Center for Civil Liberties

- It was founded in 2007 to promote human rights and democracy in Ukraine.
- After Russia's invasion of Ukraine in February 2022, the Center for Civil Liberties has engaged in efforts to identify and document Russian "war crimes" against the Ukrainian civilian population.

Indian Nobel Peace Laureates

- Kailash Satyarthi is an Indian social reformer who campaigned against child labor in India and advocated the universal right to education. In 2014, he was the co-recipient of the Nobel Peace Prize, along with Malala Yousafzai.
- Mary Teresa Bojaxhiu (Mother Teresa) was an Albanian-Indian Catholic nun who, in 1950, founded the Missionaries of Charity. For her humanitarian work, she was awarded several honours, including the 1962 Ramon Magsaysay Peace Prize and the 1979 Nobel Peace Prize.



Note:



DIGITAL RUPEE

- A digital version of Indian rupee
- Also known as e-rupee, Central Bank Digital Currency (CBDC)
- A centrally owned digital currency, **unlike privately owned cryptos**
- **Offline functionality proposed** - one can transact without the internet

Advantages

- **No or Minimal Disruption** to the financial system
- **Free of Risk:** Offers people the experience of dealing in currency in digital form, minus the risks seen with cryptos
- **Reasonable Anonymity:** Offers reasonable anonymity for small value transactions akin to physical cash

Issues

- Cyber security
- Privacy and issue of Data use
- Digital Divide
- Uncompetitive step vis-a-vis other market players like Visa, Mastercard, etc.

Roll Out Plan

- **Wholesale:** For restricted access to select financial bodies, also called **CBDC-W**.
 - Targets to make settlement systems more efficient and secure
 - It could be account-based
- **Retail:** It would be potentially available for use by all also called **CBDC-R**.
 - It could offer safer means of digital payment for citizens
 - This could likely be token-based, akin to cash

• **Ten countries have launched CBDC** (July 2022)
First was Bahamian Sand Dollar in 2020 and the latest was Jamaica's JAM-DEX

Note:

Nobel Prize in Literature 2022



WINNER

Annie Ernaux (France)

For the courage and clinical acuity with which she uncovers the roots, estrangements and collective restraints of personal memory.

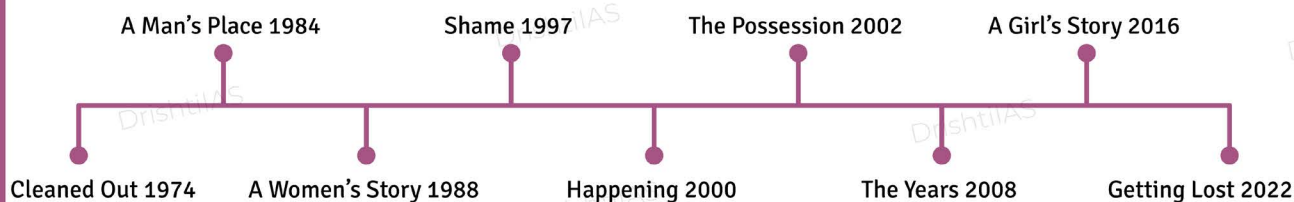
THEME OF WORK

Her writing consistently and from different angles, examines a life marked by strong disparities regarding gender, language and class.

AWARDS & RECOGNITION

French Language Prize | Marguerite Yourcenar prize | Honorary doctorate by the University of Cergy-Pontoise 2014 | "The Years" was shortlisted for the Man Booker International prize

NOTABLE WORK



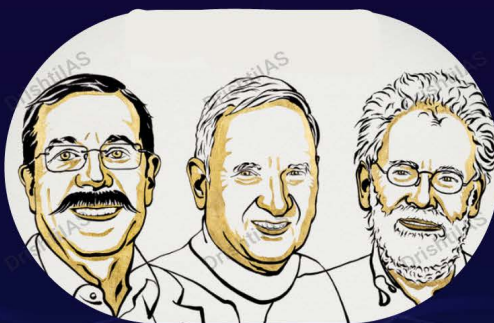
INDIAN NOBEL PRIZE LAUREATE

Rabindranath Tagore is the only Indian to receive a Nobel Prize in Literature (1913). Major Work: Gitanjali, Chokher Bali, The Postmaster, Gora, Kabuliwala (The Fruitseller from Kabul), Sadhana: The realization of life, etc.



Note:

NOBEL PRIZE IN PHYSICS 2022



NOBEL LAUREATES

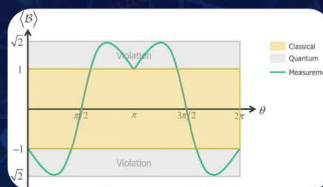
JOHN F. CLAUSER, ALAIN ASPECT AND ANTON ZEILINGER

❖ **Field of Research:** Experiments with **entangled photons** (quantum entanglement), established the violation of **Bell inequalities**, and pioneering **quantum information science**.

❖ Key Terms

❖ **Quantum Mechanics:** A subfield of physics that describes the behavior of particles - atoms, electrons, photons etc. - in the molecular and sub molecular realm.

❖ **Quantum Entanglement:** A phenomenon by which a pair of subatomic particles are allowed to exist in a shared state where they have complementary properties; by measuring the properties of one particle, one can automatically know the properties of the other particle (regardless of how far apart the two particles are transported).



Bell Inequality

❖ **Bell Inequality:** Developed by **John Stewart Bell**, it states that if there are hidden variables, the correlation between the results of a large number of measurements will never exceed a certain value.

❖ **Significance:** It will help in constructing **quantum computers**, improving measurements, building **quantum networks**, establishing secure quantum encrypted communication (**quantum cryptography**) and in **precise timekeeping** as is done in atomic clocks.

Indian Nobel Prize Laureates:

❖ **Sir Chandrasekhara Venkata (CV) Raman:** Won the Nobel Prize for Physics in **1930** for the discovery of Raman Effect. **Raman Effect** is the phenomenon of change in wavelength in light rays that are deflected. It forms the basis for Raman spectroscopy which is used by chemists and physicists to gain information about materials.

❖ **Subramanyan Chandrashekar:** Won the Nobel Prize in Physics **1983** for "his theoretical studies of the physical processes of **importance to the structure and evolution of the stars**". He also determined the upper limit of a white dwarf's mass which is referred to as **Chandrasekhar limit**.

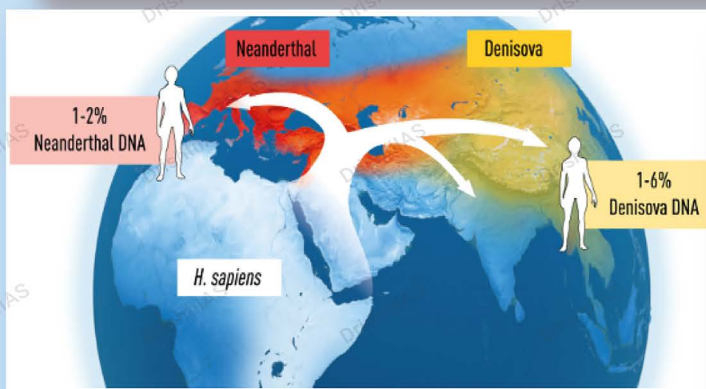
Note:

Nobel Prize in Physiology or Medicine 2022

Winner: Svante Pääbo

About

- Swedish geneticist **Svante Pääbo** for his **research in the field of genomes of extinct hominins and human evolution.**
- His research led to the rise of **new field of paleogenomics**, the branch of science based on the reconstruction and analysis of genomic information in extinct species.



Findings of Research

- **Sequencing an entire Neanderthal genome** to reveal the link between extinct people and modern humans.
 - Neanderthal is an ancient group of humans.
- **Discovery of a previously unknown human species called the Denisovans**, from a 40,000-year-old fragment of a finger bone discovered in Siberia.
 - Hominins, of which only one species—**Homo sapiens**—currently exists, are members of the family **Hominidae**.
- **In the past, Homo sapiens had encountered and interbred with Neanderthals and Denisovans.**
 - Neanderthals lived in western Eurasia, whereas Denisovans populated the eastern parts of the continent.
- **Gene transfer had occurred** from these now extinct hominins to Homo sapiens following the migration out of Africa around 70,000 years ago.
 - For instance, the **Denisovan version of the gene EPAS1 confers an advantage for survival at high altitude and is common among present-day Tibetans.**
 - Other examples are **Neanderthal genes that affect our immune response** to different types of infections.
- Pääbo's discoveries have generated **new understanding of human evolutionary history.**

Novel Methodology

- It is **not easy to amplify and sequence ancient DNA** because it is highly fragmented and full of contamination from microbes like fungi and bacteria. Over time, DNA tends to degrade and become chemically modified.
- Therefore, **Pääbo decided to study mitochondrial DNA from Neanderthals.**
 - Mitochondria, popularly called the powerhouse of the cell, is an organelle inside the cell that has its own DNA.
 - Although the mitochondrial genome is small and only contains a fraction of genetic information in the cell, it is present in thousands of copies. This increases the chance of its successful sequencing.



Drishti IAS

Note:

Nobel Prize in Chemistry 2022

About

- + Carolyn R Bertozzi, Morten Meldal and K Barry Sharpless for the development of Click Chemistry and Bioorthogonal Chemistry.
- + Sharpless coined the concept of 'click chemistry'. Meldal came up with a special chemical structure called 'triazole'. Bertozzi took the next step of developing click reactions that could work inside living organisms – 'bioorthogonal' reactions (a term she coined).
- + They have brought chemistry into the era of functionalism.



Carolyn R Bertozzi

Morten Meldal

K Barry Sharpless

Findings of Research

Concept of Click Chemistry

- + Coined around the year 2000, it is a minimalistic form of chemistry in which molecular building blocks can quickly and efficiently snap together. It is a form of simple and reliable chemistry, where reactions occur quickly, and unwanted by-products are avoided.
- + Sharpless found that instead of forcing carbon atoms, the building blocks of organic matter, to bond with each other in the process of building molecules, it's easier to link smaller molecules with complete carbon frameworks.

Azide-Alkyne Cycloaddition

- + Meldal found that adding copper ions to a reaction between an alkyne and an acyl halide created a triazole, a stable ring-shaped chemical structure that's a common building block in pharmaceuticals, dyes and agricultural chemicals.
- + Azide is an N_3 (Nitride ion) organic compound, whereas an alkyne is a hydrocarbon with at least one carbon-carbon triple bond.

Bioorthogonal Reactions

- + These reactions work inside living organisms without disrupting the normal chemistry of the cell.
- + Its use in combination with nanotechnology can lead to further developments in diverse areas of biomedicine, such as molecular bioimaging, targeted delivery etc.
- + Bertozzi, using the work of Sharpless and Meldal, came up with an efficient and innovative method to map glycans, which are carbohydrate-based polymers made by all living organisms.
- + Bertozzi focused on glycans on the surface of tumour cells. Glycans appeared to protect tumours from the body's immune system, as they make the immune cells shut down.
- + Her bioorthogonal reactions are now contributing to more targeted cancer treatments, among many other applications.

INDIAN NOBEL PRIZE LAUREATE

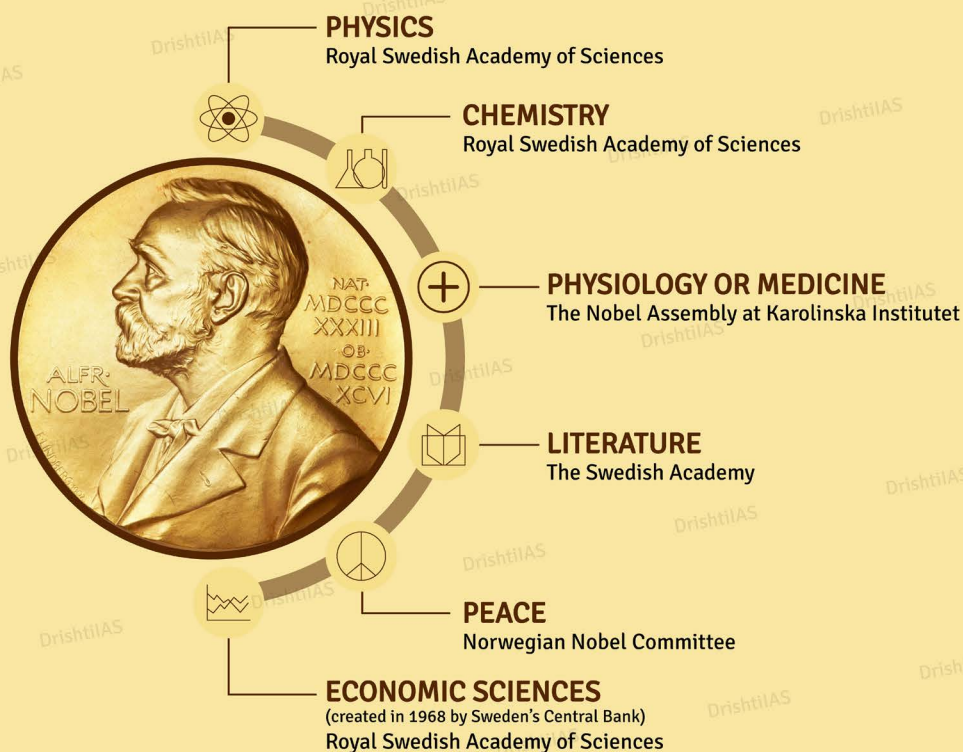
Venkatraman Ramakrishnan is the only Indian to receive a Nobel Prize in Chemistry (2009). He shared the prize with Thomas A. Steitz and Ada E. Yonath for studies of the structure and function of the ribosome.



Note:

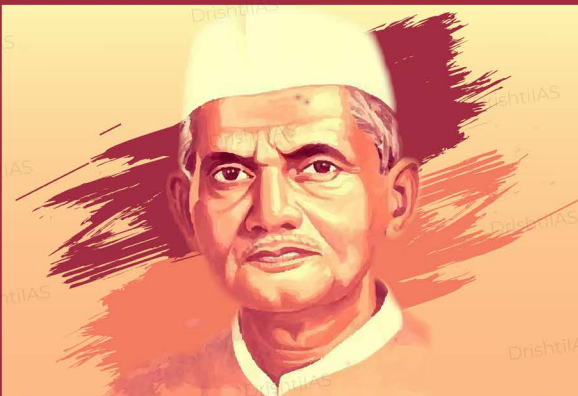
Nobel Prize

- ✦ Established by the will of Alfred Nobel (inventor of Dynamite)
- ✦ Awarded to those who have conferred the greatest benefit to humankind, during the preceding year
- ✦ First awards were handed out in 1901



- ✦ The Prize Ceremony is held in **Stockholm, Sweden**, in December every year
 - ▲ The Peace Prize is not awarded at Stockholm ceremony but presented annually in **Oslo, Norway**, on the same day
- ✦ Each Nobel laureate receives a **gold medal**, a **diploma**, and a **monetary award**
- ✦ Nobel Prize cannot be given **posthumously** (after death). Also, up to 3 people can share a Nobel Prize award between them
- ✦ **First Indian Nobel Laureate: Rabindranath Tagore for Literature, 1913**
 - ▲ **First Indian Woman Nobel Laureate: Mother Teresa for Peace, 1979**

Note:



Lal Bahadur Shastri

The Man of Peace

Brief Description

- ▲ **Birth:** 2nd October 1904, Mughalsarai (Uttar Pradesh)
- ▲ **Kashi Vidyapeeth:** Degree in Philosophy and Ethics
- ▲ **Famous Slogan:** 'Jai Jawan Jai Kisan'
- ▲ **Bharat Ratna (1966):** Awarded Posthumously
- ▲ **Lifetime Member:** Lok Seva Mandal (founded by Lala Lajpat Rai)

Political Journey

- ▲ **1928:** Joined Indian National Congress
- ▲ **1930:** Joined Freedom Movement

- ▲ **1935:** General Secretary of UP Pradeshik Congress Committee (PCC)
- ▲ **1940:** Participated in **Individual satyagraha** and sent to prison
- ▲ **1942:** Released from jail; Participated in the **Quit India Movement**

Post-independence Journey

- ▲ **1952:** Minister of Railways and Transport
- ▲ **1959:** Minister of Commerce and Industry
- ▲ **1961:** Minister of Home Affairs

Prime Minister of India (1964-66)

- ▲ **1964:** Second Prime Minister of the Republic of India
- ▲ **1964:** Took initiative of White Revolution
- ▲ **1965:** Established National Dairy Development Board (NDDB)
- ▲ **1965:** Took initiative for Green Revolution

Wars During His Tenure

- ▲ **1962:** War with China
- ▲ **1965:** War with Pakistan

Death

- ▲ **11th January 1966:** Died in Tashkent, Uzbekistan
 - ▲ Just one day after signing the peace treaty to end the 1965 war with Pakistan
- ▲ **1978:** A Book '**Lalita ke Aansoo**' was published by M.L Verma
 - ▲ Tragic story of his death is narrated by his wife Lalita Devi
- ▲ **1977:** Raj Narain committee: To look into the mysterious death of Shastri ji
- ▲ **Vijay Ghat:** Shastri ji's resting place (Delhi)
- ▲ **IAS training institute, Mussoorie:** Named as Lal Bahadur Shastri National Academy of Administration (LBSNAA)

"Discipline and united action are the real source of strength for the nation."



Note:

Mohandas Karamchand Gandhi



“The weak can never forgive. Forgiveness is the attribute of the strong.”

Brief Description

Birth: 2nd October 1869, Porbandar (Gujarat).

2nd October is observed as **International Day of Non-Violence**.

Profile: Lawyer, Politician, Social activist, Writer and led Nationalist Movement.

Father of the Nation (first called by Netaji Subhash Chandra Bose).

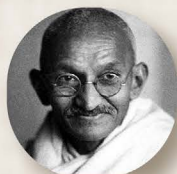
Ideology: Believed in the ideas of non-violence, Truth, Honesty, Care for Mother Nature, Compassion, Welfare of Downtrodden etc.

Political Mentor: Gopal Krishna Gokhale

Death: Shot dead by Nathuram Godse (30th January, 1948).

30th January is observed as **Martyrs' Day**

Nominated for the Nobel Peace Prize five times.



Gandhi in South Africa (1893-1915)

Used satyagraha against racist regime (Native Africans and Indians were discriminated).

Pravasi Bharatiya Divas (PBD) is celebrated every year on 9th January, to commemorate his return from South Africa.

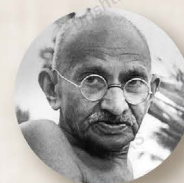
Contribution in India's Freedom Struggle

Small-scale movements like Champaran Satyagraha (1917)—First Civil Disobedience, Ahmedabad Mill Strike (1918)—First Hunger Strike, and Kheda Satyagraha (1918)—First Non-Cooperation.

Nationwide Mass Movements: Against Rowlatt Act (1919), Non-Cooperation Movement (1920-22), Civil Disobedience Movement (1930-34), Quit India Movement (1942).

Gandhi-Irwin Pact (1931): Between Gandhi and Lord Irwin that marked the end of a period of civil disobedience.

Poona Pact (1932): Between Gandhi and **B.R. Ambedkar**; this abandoned the idea of separate electorates for the depressed classes (Communal Award).



Books Written

Hind Swaraj, My Experiments with Truth (Autobiography)

Weeklies

Harijan, Navjivan, Young India, Indian Opinion.

Gandhi Peace Prize

is given by India for social, economic, and political transformation through Gandhian methods.

“Happiness is when what you think, what you say, and what you do are in harmony.”

“You must not lose faith in humanity. Humanity is an ocean; if a few drops of the ocean are dirty, the ocean does not become dirty.”

Note:

Odissi (Odisha)



- Based on: **Natya Shastra and Abhinaya Darpana.**
- Representation: **Graceful, Sensual and Beautiful.**
- Also Known as '**mobile sculpture**'.
- Examples of earliest Odissi dance: **Caves of Udayagiri-Khandagiri**
- Primarily practiced by: **Maharis.**
- Patronized by: **Jain king Kharavela.**
- Odissi dance is accompanied by **Hindustani classical music.**

Nartala

- Variant of Odissi.
- Practiced at the royal courts.
- Major subjects of performance**
- Incarnations of **Lord Vishnu**
- Verses of **Jayadeva's Gita Govinda**
- Two major postures**
- **Tribhanga:** The body is deflected at the neck, torso and the knees.
- **Chowk:** A position imitating a square.

Elements

- **Mangalacharan**
Beginning of dance.
Flower is offered to mother earth.
- **Batu Nritya**
It has the Tribhanga and the Chowk postures.
- **Pallavi**
Prominent facial expressions.
Representation of dance and song.
- **Tharijham**
Pure dance before conclusion.

Two types of concluding items

- **Moksha:** Joyous movements signifying liberation.
- **Trikhanda majura:** Performer takes leave from the gods, audience and stage.

Costumes

- Elaborate hairstyle
- Silver Jewellery
- Long necklace.

Famous Proponents

- Guru Pankaj Charan Das
- Guru Kelu Charan Mohapatra
- Sonal Mansingh
- Sharon Lowen (US)
- Myrta Barvie (Argentina).

Instruments

Drum Pakhawaj Flute Sitar
Manjira (Cymbals)



Note:

Kuchipudi (Andhra Pradesh)

Origin

Originated in a village named **Krishna district** in Andhra Pradesh.

Siddhendra Yogi systematized the **modern version in 17th century**

Lakshminarayan Shastry, in early 20th century, **brought in new practices** such as solo recitals and female participation.

Predominance of **Shringara ras**.

Theme: Secular

Instruments

- Mridangam



- Cymbal



- Violin or veena



Solo Performance

Manduka Shabdham: Story of frog maiden.

Tarangam: The dancer performs with his/her feet on the edges of a brass plate and balancing a pot of water on the head or a set of diyas.

Jala Chitra Nritya: Dancer draws pictures on the floor with his or her toes while dancing.

Group Performance

Involves **Nritta, Natya and Nritya**.

Kavutvams: Nritya (extensive acrobatics) and Nritta (pure dance)

Sollakath or Patakshara : Nritta part
Central Theme: Stories of **Bhagavat Purana**.

Dancers are known as **Bhagavathalus**. Both **Lasya and Tandava** elements are important.

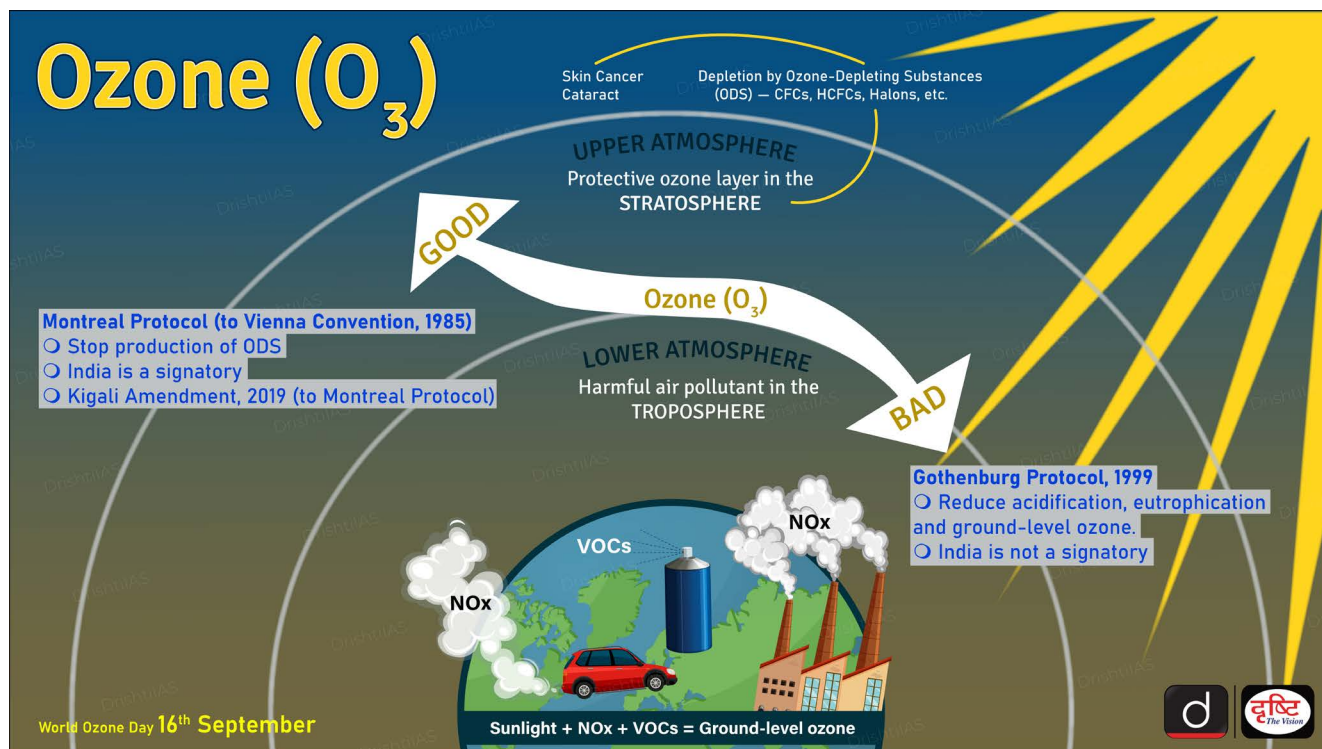
Famous Proponents

- Radha Reddy
- Raja Reddy
- Yamini
- Krishnamurthy
- Indrani Rehman



Drishti IAS

Note:



Note:



Mohiniyattam (Kerala)

- Also known as the dance of Mohini (an incarnation of Lord Vishnu).
- Performed by women.
- Thumping of footsteps is absent.
- Footwork is gentle.
- Narrates the story of the feminine dance of Vishnu.

Performancee

- Mostly a solo performance
- The Lasya aspect (beauty, grace) of dance is dominant
- Inculcates elements of Bharatanatyam (grace & elegance) and Kathakali (vigor)
- The famous Malayali poet V. N. Menon revived it along with Kalyani Amma

Referenees of Mohiniyattam:

- Vyavaharamala written in 1709 by Mazhamagalam Narayanan Namboodiri.
- Ghoshayatra, written later by poet Kunjan Nambiar.

Instruments

- Edakka (Main)
- Mridangam
- Veena
- Flute
- Kuzhitalam or Cymbals

Costumes

- Kasavu saree of Kerala.
- White and off-white being the principal colors and the presence of gold colored brocade designs.
- Leather strap with bells (Ghungroo).

–‘Atavakul or Atavus’ is the collection of forty basic dance movements.



Note:

Cheetah

Common Name – Cheetah

Scientific Name – *Acinonyx jubatus*

- *Acinonyx jubatus jubatus* (African Cheetah)
- *Acinonyx jubatus venaticus* (Asiatic Cheetah)



Reintroduction of Cheetah to India:

- The "Action Plan for Introduction of Cheetah in India" was released by MoEF&CC at the 19th meeting of the National Tiger Conservation Authority (NTCA) (January 2022).
 - Such a plan was first proposed in 2009.
- In September 2022, eight cheetahs landed in India from Namibia.
 - The 8 cheetahs have been relocated to the Kuno-Palpur National Park, Madhya Pradesh.
- The relocation of cheetahs to India from Namibia is the world's first inter-continental large wild carnivore translocation project.

Slightly brownish and golden skin; thicker than the Asiatic Cheetahs

More prominent spots and lines on the face

Found all over the African continent

IUCN Red List Status – Vulnerable



African Cheetah

Slightly smaller than the African ones.

Pale yellowish fawn coloured skin – more fur under body, belly specifically.

Found only in Iran; the country claims there are only 12 of them left. Year 1952 – Asiatic Cheetah officially declared extinct from India.



Asiatic Cheetah

IUCN Red List Status – Critically Endangered



Drishti IAS

Note:

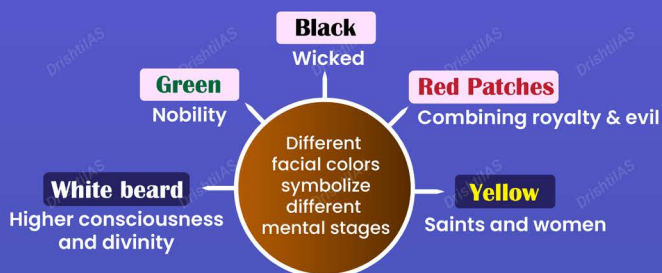


കാതകലി (കാതകലി)

ഇത്യാർത്ഥം കാതകലി

- **Ramanattam**: Narrating episodes from **Ramayana**.
- **Krishnattam**: Narrating episodes from **Mahabharata**.

- Blend of **dance, music and drama**.
- Traditionally, only **men and young boys** who can play both **male and female roles** conduct **Kathakali**. Women are now taking part as well.
- **Language of Kathakali songs**: Manipravalam (Mixture of Malayalam and Sanskrit).
- It is also called as '**ballad of the east**'.
- Remarkable in the **representation of the rasas through movements of eye and eyebrows**.
- **Navarasas** : Nine important facial expressions.
 - Dancers enact the roles of **kings, gods and demons** etc.
 - Grand representation of the eternal conflict between **good and evil**.
 - It was revived in the 1930s by the famous **Malayali poet V. N. Menon** under the patronage of **Mukunda Raja**.



- **Hand gestures, facial expressions and eye movements are important**

കാതകലി

Very elaborate facial makes up Elaborate masks Huge skirts Big headdresses

കാതകലി പ്രവർത്തകർ

Guru Kunchu Kurup Gopi Nath Kottakal Sivaraman Rita Ganguly

കാതകലി

Chhenda
Maddala



Note:



Kathak (North India)

Derived from the word 'Kathika' (Story)

Origins

Ras Leela of Brajbhoomi
Combined music, dance and the narrative
Temple or village performance

The **Radha-Krishna** theme is immensely popular in Kathak

- Classical Dance: North India (Primarily Uttar Pradesh).
- The classical style of Kathak was revived by Lady Leela Sokhey in the twentieth century.
- Only style of classical dance associated with Hindustani or North Indian music.

Performance

Recites verses from the epics, with gestures and music.

The focus is more on footwork and movement of the legs. It puts more importance on expression and grace

Usually solo performances

Elements of a Kathak recital

Ananda	Introductory item
Thaat	Soft and varied movements.
Todas and Tukdas	Small pieces of fast rhythm.
Jugalbandi	Competitive play between the dancer and the table player.
Padhant	Dancer recites complicated bols and demonstrates them.
Tarana	Pure rhythmic movements before the end.
Kramalaya	Concluding piece comprising of intricate
Gat bhaav	Dance without any music or chanting.

Famous Proponents

Birju Maharaj

Lacchu Maharaj

Sitara Devi

Damayanti Joshi

Instruments

Tabla
Pakhawaj
Sarangi
Sitar



Note:



Bharatnatyam (Tamil Nadu)

Oldest dance form



Origins

Sadir: Solo dance Performance by temple dancers or devadasis.
Also referred to as 'Dashiattam'

References

In the book **Abhinaya Darpana** by **Nandikesvara**.
In paintings and stone and metal sculptures of ancient times.
Ex- On the **gopurams** of the **Chidambaram temple**.

Seven main parts of dance

Alarippu

- Basic dance postures.
- Rhythmic Syllables.
- It is meant to seek the blessings of God.

Jatiswaram

- Component of Nritta
- Devoid of expressions
- Different poses and movements.

Shabda

- Dramatic element with expressed words
- Praise of the glory of God.

Varnam

- Component of Nritya
- Combination of dance and emotions
- Synchronized with tala and raag, to express the story.

Padam

- Abhinaya (expression) of spiritual message
- Light Music
- Emotional Dance.

Jawali

- Short love-lyrics
- Faster tempo

Thillana

- Stage performance
- Pure dance (Nritta)

- The person who conducts the dance recitation is the **Nattuvanar**.

- **Bharatnatyam** is often referred to as the '**fire dance**'. Most of the movements in Bharatanatyam resemble that of a **dancing flame**.

- Bharatnatyam dance is also **known to be ekaharya**, where one dancer takes on many roles in a single performance.

- Equal emphasis: **Tandava and Lasya aspects**.

- **Principal mudras: Katakamukha Hasta**, in which three fingers are joined to symbolize 'Om'

• **Instruments:** Mridangam, Violin or veena, Flutist C, Cymbal.

• **Performed** by solo female, Male and Group Dancers.

• **Famous proponents of Bharatnatyam:** Rukmini Devi Arundale, Yamini Krishnamurthy, Lakshmi Viswanathan, Padma Subramaniam, Mrinalini Sarabhai, Mallika Sarabhai, etc.



Note:

Classical Dances of India

⇒ The first well-known source to address classical dances is **Bharat Muni's work Natya Shastra**.

Two basic aspects

Lasya

- Signifies **bhava, rasa, abhinaya**, and **grace**.
- Symbolic to the **feminine** features of dance.

Tandava

- More focus on **movement** and **rhythm**.
- Symbolic to the **male aspects** of dance.

Three main elements (Nandikeshwara's Abhinaya Darpan)

Nritya

- Basic dance moves.
- Rhythmically performed.
- No emotion or expression at all.

Natya

- Dramatic representations.
- The dance performance elaborates on the story.

Nritya

- Sentiment and the emotions evoked through dance.
- Different methods of expression or mudras in the dance.

⇒ There are **108 primary mudras**, each of which is used to express a different emotion.

⇒ According to the **Sangeet Natak Akademi**, there are **eight classical dance forms** in India.





Human Development Report (HDR)



Released by: United Nations Development Programme (UNDP) since 1990.



Human Development Index

- It measures average achievement in human development taking into account:
 - Life expectancy at birth,
 - Expected and Mean years of schooling,
 - Gross National Income (GNI).
- India's rank in HDI slipped from 130 in 2020 to 132 (out of 191 countries) in 2022 with a score of 0.633.
- Switzerland is ranked 1 with a score of 0.962.

Inequality-Adjusted HDI (IHDI)

- It is the level of human development where inequality is taken into account.
- India's HDI for 2021-22 fell by 25% (i.e. scored 0.475) after inequality was considered.
 - The share of income held by the richest 1% of the population is more than the income held by the poorest 40%.



Indices Under HDR

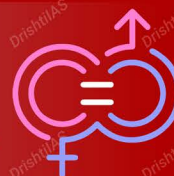


Gender Development Index (GDI)

- It estimates HDI values for women and men. The closer this ratio is to 1, the smaller the gender gap between women and men in HDI terms.
- India with a score of 0.849 is significantly behind the world average in this parameter.

Gender Inequality Index (GII)

- It assesses gender inequality using three dimensions:
 - Reproductive health
 - Empowerment
 - Labour market
- A low GII value indicates low inequality between women and men, and a high GII value indicates high inequality between women and men.
- India with a score of 0.490 ranked 122nd is unequal for its female citizens.



Multidimensional Poverty Index (MPI)

- It captures the multiple deprivations that people in developing countries face in their health, education and standard of living.
- As of 2019, India had more than 381 million who were suffering from multi-dimensional poverty.

Planetary pressures-adjusted Human Development Index (PHDI)

- It adjusts the standard HDI by a country's level of carbon dioxide emissions and material footprint, each on a per capita basis.
- It was proposed in HDR 2020.
- India scored 0.609 in the PHDI for 2021-22.



Note:

Gurdev Singh Khush: The Rice Man of India



KHUSH'S TEAM
at International Rice
Research Institute
bred 328 lines
released as 643
varieties in 75
countries between
1967 and 2002

ABOUT 60%
of the world's rice
area in 2002 was
planted to IRRI
varieties, resulting in
rice production going
up more than 2.3
times

THE MIRACLE KHUSH RICE VARIETIES



IR36
RELEASED IN 1976

- Planted in about 11 million hectares annually worldwide during the 1980s, the highest area occupied by any food crop in history
- Could yield 9-10 tonnes grain per hectare and mature in 110-115 days, as against 1-3 tonnes over 160-180 days of traditional varieties. High yields with short duration could enable farmers to grow two rice crops a year
- First ever variety bred for resistance against a wide spectrum of pests and diseases through incorporation of genes from 14 native landraces of six countries and one wild rice species.

IR64

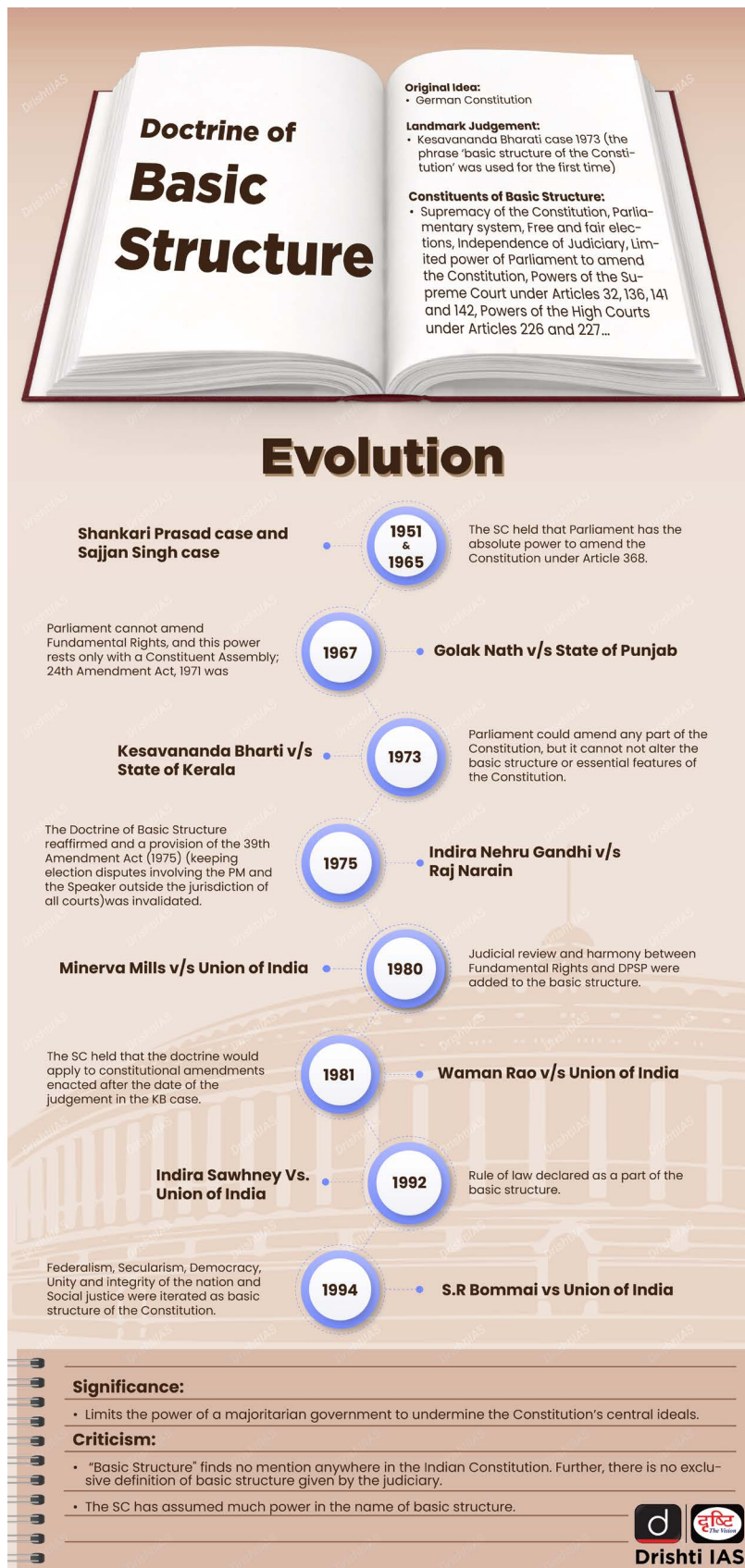


- Released in 1985 and planted in over 10 million hectares during the late-1990s
- Higher yields with resistance to even more pests and diseases than

IR36. Incorporating genes from 20 genes of eight countries

- Scored in grain quality in terms of texture and palatability and also higher rice milling recovery

Note:



Note:



Note:

Nasal vaccines: A silver bullet for Covid-19?

The first of nasal vaccines targeting the Sars-CoV-2 were approved this week. A look at how they may be a game-changer

THE CANDIDATES

According to the World Health Organization data, there are eight intranasal vaccines under development. Two of these now have received some form of approval

Convidecia Air

PRODUCER: CANSINO BIOLOGICS

Platform: Ad5 adenovirus based inhaled vaccine

In July, Chinese scientists published a pre-print study that one booster dose of the inhaled vaccine led to more antibodies than a conventional booster shot. Four weeks after the dose of the inhaled vaccine, 92.5% of people had antibodies for Omicron, while those who got three doses of the intramuscular jab did not have any.



PRODUCER: BHARAT BIOTECH
Platform: Ad35 adenovirus based intranasal vaccine

Developed in partnership with Precision Virologics and Washington University School of Medicine, this dose has in animal trials been shown to confer superior protection than conventional doses, elicited antibodies in the mucous membranes and epithelial cells in the lungs that the intramuscular jabs would not be able to. Clinical trial data has not been released yet. The vaccine received official approval for emergency use on Tuesday.

Incovacc

PRODUCER: BHARAT BIOTECH

Platform: Ad35 adenovirus based intranasal vaccine

THE ADVANTAGES

Scientists have described protection from nasal vaccines as akin to "putting guards outside a home, instead of having them inside".



BETTER LUNG PROTECTION:

While a study that showed this involved a different vaccine, scientists at Yale found that the nasal vaccine they tested also lead to IgA antibody secretions in the lung, protecting it better.



MAKES VIRAL ENTRY DIFFICULT:

These vaccines elicit what are known as IgA antibodies, which coat the mucous lining. This is crucial because the coronavirus first infects the mucous membrane in the nose and throat from where it spreads further. In other words, these are likely to prevent infection in the first place.



POSSIBLE DROP IN INFECTIVITY:

Shots delivered to the muscle only marginally limit a vaccinated person's tendency to spread the virus, though they are significantly protected from disease. Nasal vaccines will cut this infectivity drastically, which could blunt new waves.

AND ANY CHALLENGES?

While these vaccines are largely safe, they are tough to get right. Efficacy depends entirely on the bioengineering and platform involved and current candidates employ a wide variety of approaches.

India's vaccination: In numbers

2.14 billion Total shots administered | **1.03 billion** People jabbed till date

Note:



drishti

Chief Justice of India

(Head of the Supreme Court)



Justice Uday Umesh Lalit

49th Chief Justice of India

Qualification



A citizen of India
He should have been:

A judge of a High Court (or high courts in succession) for five years or
An advocate of a High Court (or High Courts in succession) for ten years or
A distinguished jurist in the opinion of the President
The Constitution has **not prescribed a minimum age** for appointment as a judge of the SC

SC judges **retire on attaining the age of 65**

Appointment



CJI is **appointed by the President under Article 124 (2) of the Constitution**

As per the protocol, the senior-most judge of the SC is designated as the CJI.
The recommendation of the senior-most judge of the SC is officially communicated by the incumbent CJI to the Ministry of Law and Justice, which, then, relays the communication to the Prime Minister
The Prime Minister advises the President on the recommendation and the President subsequently makes the appointment

Role



Swearing in of the President and Governors.

"Master of the Roster", CJI has the power to constitute benches to hear cases in the SC. CJI decides which judge will hear which case and when
CJI (**along with collegium of four senior most judges of SC**) is consulted by the President for the appointment of judges in the SC and the HC
CJI appoints **ad-hoc SC judges** under Article 127 of the Constitution
With the approval of the President, the CJI can **change the seat of the SC** from Delhi to any other place
CJI can **appoint an arbitrator to resolve a financial dispute** between the Centre and the states

Removal



By **an order of the President**

Only after an address by Parliament has been presented to President
Supported by a **special majority of each House of Parliament** (i.e. by a majority of the total membership of that House and by a majority of not less than two-thirds of the members of that House present and voting)
Grounds of Removal - Proved misbehaviour or Incapacity (Article 124(4))

The SC, in 2019, ruled that the office of CJI comes under the purview of the RTI Act, 2005



Note:

Monetary Policy Committee



Monetary Policy

- It is formed and managed by **Reserve Bank of India** to control a nation's overall money supply and achieve economic growth
- It is **different from Fiscal Policy** which is managed by the **Ministry of Finance** that measures the spending and taxation in Indian Economy

Monetary Policy Committee (MPC):

- **Ex-officio Chairperson:** RBI Governor
- **Objective:** To determine the policy rate required to achieve the inflation target ($4\pm 2\%$, Urjit Patel Committee)

- **Legal Framework:** Under Section 452B of the amended RBI Act, 1934, the Central Government is empowered to constitute a six-member Monetary Policy Committee (MPC)
 - The MPC is required to meet at least four times in a year. Each member of the MPC has one vote, and in the event of an equality of votes, the Governor has a second or casting vote.
- **Monetary Policy Report:** RBI once in every six months, releases Monetary Policy Report to explain the sources of inflation and the forecast of inflation for 6-18 months ahead



Note:



Note:

Jal Jeevan Mission (Urban)

Nodal Ministry:

- Ministry of Housing and Urban Affairs

About:

- Announced in **Union Budget 2021-22**.
- To provide universal coverage of water supply to all households through functional taps in all 4,378 statutory towns.
- This in line with the Centre's rural water supply project (Jal Jeevan Mission) launched in 2019.

Objectives:

- Securing tap and sewer connections
- Rejuvenation of water bodies
- Creating a circular water economy
- Providing coverage of sewage/septage management in 500 AMRUT Cities
- To meet Sustainable Development Goal 6 (clean water and sanitation for all)

Features:


- **Pey Jal Survekshan** - Survey for Equitable Distribution
- Focus on Strengthening Urban Local Bodies
- Promoting Dual Piping Systems
- Promoting the PPP (Public-Private Partnership) Model
- A Technology Sub-Mission for water
- The Information, Education and Communication (IEC) Campaign to spread awareness about conservation of water.

Central Funding:

- For Union Territories: **100%** 
- For North Eastern and Hill States: **90%** 
- For Other States:
 - Cities with less than 1 lakh population: 50%
 - Cities with 1 lakh - 10 lakh population: 33.3%
 - Cities with 1 million plus population : 25%



Note:



Asiatic Lion

Panthera Leo Persica

Features

- Asiatic lions are slightly smaller than African lions.
- The most striking morphological character, which is always seen in Asiatic lions, and rarely in African lions, is a longitudinal fold of skin running along its belly.

Habitat

- At present Gir National Park and Wildlife Sanctuary (Gujarat) is the only abode of the Asiatic lion.

Protection Status



- Endangered: IUCN Red List
- Appendix I: CITES
- Schedule I: Indian Wildlife (Protection) Act 1972

Threats

- Human Animal Conflict
- Poaching
- Genetic Inbreeding
- Diseases such as plague, canine distemper

Conservation Efforts

- Asiatic Lion Conservation Project
- Project Lion
- World Lion Day (10th August)



Note:

Snow Leopard

Panthera Uncia

Often referred to as the "ghost of the mountains"

HABITAT

- Mountainous regions of **Central and Southern Asia**
- **12** Range Countries
- In India:
 - **Western Himalayas:** Jammu and Kashmir, Ladakh, Himachal Pradesh
 - **Eastern Himalayas:** Uttarakhand and Sikkim and Arunachal Pradesh

MAJOR SITES

- Hemis National Park, Ladakh
 - **Snow leopard capital of the world**
- Great Himalayan National Park, Himachal Pradesh
- Gangotri National Park, Uttarakhand
- Khangchendzonga National Park, Sikkim

PROTECTION STATUS

- **Vulnerable:** IUCN Red List
- **Appendix I:** CITES
- **Schedule I:** Indian Wildlife (Protection) Act 1972

CONSERVATION EFFORTS

- Global Snow Leopard and Ecosystem Protection (GSLEP) Programme
- Himal Sanrakshak- Community Volunteer Programme
- Project Snow Leopard
- Snow Leopard Conservation Breeding Programme- Padmaja Naidu Himalayan Zoological Park, West Bengal

THREATS

- Human Snow Leopard Conflict
- Climate Change
- Loss of Prey and Habitat
- Poaching



Note:



Note:

RAMSAR CONVENTION

About

- Also known as the Convention on Wetlands.
- An intergovernmental treaty, adopted in 1971, in Ramsar, Iran.
- Entered into force in 1975.
- Wetlands that are of international importance are declared as Ramsar sites.
- Largest Ramsar Site in World: Pantanal: South America

Montreux Record

- Adopted in Montreux (Switzerland) in 1990.
- Identifies Ramsar sites that need priority conservation attention at national or international level.

Wetlands

- A place in which the land is covered by water – salt, fresh, or somewhere in between – either seasonally or permanently.
- Take many forms including rivers, marshes, bogs, mangroves, mudflats, ponds, swamps, billabongs, lagoons, lakes, and floodplains.
- World Wetlands Day: 2nd February



India & Ramsar Convention

- Came into force in India: **1982**
- Total Number of Ramsar Sites: **75**
 - Chilika Lake (Odisha), Keoladeo National Park (Rajasthan), Harike Lake (Punjab), Loktak Lake (Manipur), Wular Lake (Jammu and Kashmir), etc.
- Related Framework in India
 - The Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified Wetlands (Conservation and Management) Rules, 2017 under the provisions of the Environment (Protection) Act, 1986 as regulatory framework for conservation and management of wetlands.
 - The 2017 Rules decentralise wetlands management and provide for the constitution of the State Wetlands Authority or Union Territory Wetlands Authority.

Key Facts

- Largest Ramsar Site: Sunderbans, West Bengal
- Smallest Ramsar Site: Vembannur Wetland Complex, Tamil Nadu
- State with the maximum number of Ramsar Sites: Tamil Nadu (14)
- Wetlands in Montreux Record:
 - Keoladeo National Park: Rajasthan
 - Loktak Lake: Manipur



Note:

Draupadi Murmu

- India's first tribal President
- Second woman President after Smt. Pratibha Patil
- Coming from Odisha's Mayurbhanj district, Murmu belongs to Santhal tribe – the third largest Scheduled Tribe in India (after Gonds and Bhils)

15th President of India

Who is a President?

- **About:** Head of the Indian State and the first citizen of India
- **Election:** Elected by an electoral college consisting of MPs of both Houses of Parliament and MLAs of the states and Delhi and Puducherry. (but not the nominated members of Rajya Sabha, Lok Sabha and Assemblies and members of Councils)
- **Constitutional Provisions:** Article 54 - 62

What Powers does President Enjoy?

Legislative Powers:

- Power to dissolve the Lok Sabha
- Gives final assent to pass a bill
- Promulgate ordinances when the Parliament is not in session
- Power to summon both the Houses of Parliament to meet in a joint sitting

Appointing Power:

- Appoints the Prime Minister, CJI and other judges of Supreme Court, Governor of the state, Ambassadors to other countries, Attorney General etc.

Military Powers:

- Commander in chief of all the Indian armed forces.
- Appoints the Chiefs of the Army, Navy and Air Force

- Power to declare war or conclude peace with any country on the advice of a council of ministers headed by the PM.

- Treaties with other countries are signed under his/her name

Pardoning Power (Article 72):

- May grant pardons if the punishment of the crime is an offence against union law, granted by the military court or the punishment is that of death

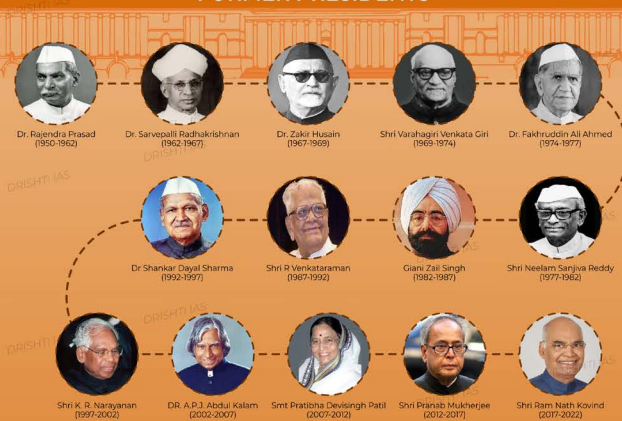
Emergency Powers:

- Can declare three types of emergencies: nation, state and financial, under Articles 352, 356 & 360
- Can rule individual states or the whole nation at times of emergency

Important Articles of Indian Constitution

- **Article 52:** The President of India
- **Article 53:** The executive power of the President
- **Article 72:** Powers of the president to grant pardons etc. and to suspend, remit or commute sentences in certain cases
- **Article 74:** Council of Ministers to aid and advise the President
- **Article 85:** Sessions of parliaments, prorogations and dissolution
- **Article 111:** Assent to bills passed by the parliaments
- **Article 112:** Union Budget (Annual Financial Statement)
- **Article 123:** Power of President to promulgate ordinances
- **Article 143:** Power of President to consult the Supreme Court

FORMER PRESIDENTS



INTERESTING FACTS

- **Rajendra Prasad** was the first President of India. He is also the only President to have served two consecutive terms.
- **Zakir Hussain** was the third President of India, and the first Muslim President. He was the shortest serving President of India (less than 2 years).
- So far two Presidents, **Dr. Zakir Hussain** and **Fakhruddin Ali Ahmed** (Fifth President), have died during their term of office.
- When President **Dr. Zakir Hussain** died in May, 1969, the then Vice-President, **V.V. Giri** was acting as the President.
- Soon after **V.V. Giri** resigned to contest the election of the President. Then the **Chief Justice of India, M. Hidayatullah** worked as the officiating President from 20 July, 1969 to 24 August, 1969.



Note:

GLOBAL GENDER GAP INDEX 2022

Released by **World Economic Forum**

Top Performer Iceland

Worst Performer Afghanistan

Four Key Dimensions



Economic Participation and Opportunity



Educational Attainment



Health and Survival



Political Empowerment

Key Findings

- It will take 132 years to reach gender parity.
- Impact of Covid (Shecession): Women have borne the brunt of the recession, largely because they work in sectors that were most impacted, such as retail and hospitality.

India's Rank – 135 (out of 146 countries)

- Worst performer in the world in the “health and survival” dimension.
- Overall score has improved from 0.625 to 0.629. In 2021, India was ranked 140 out of 156 countries.
- Ranks poorly among its neighbours - Bangladesh (71), Nepal (96), Sri Lanka (110), Maldives (117) and Bhutan (126).
 - Only Iran (143), Pakistan (145) and Afghanistan (146) perform worse than India in south Asia.



Note: